A Clinical Lecture

ON

EPITHELIOMA OF THE PENIS AND ITS TREATMENT.

Delivered at the London Hospital on Jan. 27th, 1899,

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GENTLEMEN,—Epithelioma of the penis is, you may think, almost too rare a disease to have devoted to it a whole lecture, but I can speak from experience on this subject and I wish to impress upon you that it is such rare affections as this which are worthy of your study, because it is their rarity which leads to mistakes in diagnosis at a time when treatment might be successful, and in epithelioma of the penis and the tongue there is much loss of life due to such mistakes.

Epithelioma of the penis and the tongue are local forms of cancer—they practically never occur as remote deposits and secondary deposits in the liver are so rare that they are pathological curiosities. Epithelioma is mistaken for many other conditions—chiefly for venereal sores. I will now relate to you a case in which epithelioma of the penis was mistaken for something else and it was a case which involved amputation.

The patient was a man, aged 66 years, whose symptoms began with irritation about the urethra. On examination an ulcer just within the meatus was found. This had been treated with nitric acid. In the groin there was a lump which formed a month or two after the ulcer and which was adherent to Poupart's ligament. It felt like a mass of scirrhous glands and the contrast between these glands and the primary growth was most striking, for the primary lesion had to be carefully searched for. In June, 1896, I amputated the penis and removed the glands, and the patient is now in perfect health, as the glands were removed before any other glands were involved. On examining the specimen microscopically there were no cell nests to be found.

Like chancre of the urethra, epithelioma is confined to the first inch of the urethra, and it is the same with carcinoma. Sarcoma may start in any part of the urethra. Then we come to the more ordinary forms of cancer of the penis, of which there are two kinds—viz., (1) a flat ulcer just within the urethra and (2) a fungating form in which there are masses of cauliflower-like growth just within the meatus. The specimen which I now pass to you shows a fungating mass of such enormous size that one cannot at first recognise the penis. This other specimen is from a case in which the growth had been preceded by balanitis. You will note the thickened prepuce.

Epithelioma of the penis is generally associated with phimosis and it is very rare amongst Hebrews. There is a discharge under the foreskin, which is generally foul-smelling and tinged with blood, and you find induration under the prepuce. Now, if you are in doubt about the diagnosis, be sure to examine the discharge under the microscope. It is of great importance that you should do this. Stain it with methyl violet or methyl blue and you will find nuclear proliferation and that the cells are of large size. But in cancer you will find pus cells or more or less altered epithelium in small quantities. Regarding the site of the disease it is generally on the surface of the glans or preputial fold and it will tend to ulcerate through the prepuce. In the specimen before you it has thus ulcerated and has grown through the orifice of the prepuce. The induration at the base of an epithelioma of the penis is quite as marked as in a Hunterian chancre.

The age of the patient is a help to diagnosis, for nearly all the cases of epithelioma occur after 50 years of age, but cases have occurred at the age of 34 years, and in one case which I recollect the patient was 77 years of age. These two photographs are of a case of epithelioma of the penis which had been treated for syphilis and you will see that the patient has a well-marked iodine rash. Regarding the diagnosis from age you must remember that primary chancres may be acquired at any age. I have seen it in a man aged 71 years and in another patient who was still older. The duration of the case of course helps one very much. By the time a case of epithelioma of the penis comes under observation it has generally lasted three months and if it is a primary chancre the patient should have developed a rash. In epithelioma of the tongue you may get a history of a sore on the penis; for epithelioma of the tongue has much more dependence on syphilis than has epithelioma of the penis.

The diagnosis between epithelioma and tertiary syphilis is often very difficult. I have had to amputate the end of the penis for gummatous disease, but the condition was clearly diagnosed beforehand and there was so much gummatous degeneration that the operation was justifiable.

I must remind you that there are some special points about the way in which epithelioma spreads. Although the growth may be very extensive around the glans the urethra is only affected late and this affection is generally by the spread of the disease right through the thickness of the glans rather than by turning the corner of the meatus and then spreading backwards. This is important, for if the urethra were rapidly involved it would be necessary to amputate higher up. It does not readily spread into the corpora cavernosa—in fact, it is very rare for it to do so—and in hunting for specimens of involvement of the corpora cavernosa I only found one. Therefore amputation for epithelioma of the glans and prepuce need not include amputation of the corpora cavernosa very far back.

In examining a specimen of epithelioma microscopically the following points should be noticed: (1) the enormous proliferation and (2) the fact that the epithelioma always grows in a moist situation. There are found also on section large sinuses; the cells are shed on to the surface and the cell nests are of enormous size. It is also to be noted that large cyst-like spaces are very common in epithelioma of the penis—in as many as one in every six cases examined—while none of these cyst-like spaces were found in epithelioma of the skin and mucous membranes. These cyst-like spaces are lined with a layer of epithelium and quite free in the cavity are large nucleated cells and leucocytes floating in a clear fluid. Now, what do these spaces mean? It has been stated that they are cavernous spaces, but they are really newly formed spaces. Again, to what is the liquefaction in the spaces due—to micro-organisms or to what? These cyst-like spaces are not peculiar to epithelioma of the penis. I have seen them in epithelioma of the tongue. Mr. Shattock of St. Thomas's Hospital associates them with rapid growth and rapid breaking down rather than with cancer. Regarding the different kinds of epithelioma of the penis several kinds may be differentiated, but the best way, I think, is to separate them into two divisions from a clinical point of view—viz., (1) a flat induration and (2) a fungating form.

The cause of this disease is not clearly known. Phimosis is constant in all cases, therefore there is irritation, and this is an additional argument for doing a circumcision on every child with a tight foreskin. There have been cases of it in men whose wives had carcinoma of the uterus, but this is probably only a coincidence. Syphilis does not affect it and does not cause it.

Now about the treatment. If you operate on an epithelioma of the penis you should if possible do the mild operation through the penis—that is to say, you should leave a stump of the penis. There are many reasons for this. First, a patient will far more readily consent to the mild operation; secondly, there are grave risks with the more serious operation; and, moreover, the ultimate result of the mild operation is much better. Of the two chief operations which I have mentioned the severe operation is known as the Thiersch-Gould operation and consists in the removal of the whole of the penis and scrotum. [Here followed a short description of the Thiersch-Gould operation.] This specimen shows a penis and scrotum which have been removed by this method. The Abyssinians performed this operation upon all the wounded Italians whom they found after the battle of Adowa. This Thiersch-Gould operation is an example of wrong nomenclature, for it has been performed and written about by half-a-dozen surgeons since the beginning of the century. The only two cases in which I have performed this operation have left a bad impression on my mind, for one patient had a tight stricture at the perineal orifice of the urethra and the other patient died six months after the operation. I also remember a case of this

operation 16 years ago in which the patient died from exhaustion following suppuration of the wound.

I would urge upon you that in the great majority of cases the less serious operation is the only one required and I do not think that any operation is so good as that by dorsal flap. In this operation you first make out the upper limit of the induration and go well above its margin. It has never yet been proved that epitheliomatous nodules occur in the course of the lymphatics, so that there is no objection to the dorsal flap. A tourniquet is necessary, and an indiarubber catheter will serve the purpose. The dorsal flap must be sufficiently long to cover the whole of the penis. Then, the flap being reflected, pass a catheter along the urethra as far as the tourniquet and divide both corpora cavernosa; then dissect the urethra back and divide it from a half to one inch in front of the corpora cavernosa. The mucous membrane of the cut end of the urethra should then be divided and everted and the everted portion should be sutured to the cut margin of the skin by one or two sutures. The vessels which require ligature are the artery of each corpus cavernosum, the dorsal artery of the penis, and one or two veins in the subcutaneous tissue. You must tie carefully all bleeding vessels before you remove the tourniquet. As to a dressing, if all the vessels have been tied there need be none. Merely dust a little antiseptic powder over the stump. You have sometimes to draw off the urine with a catheter on the first night after the operation, but this is not often necessary. If you remove the penis with the galvano-cautery (which ought never to be done now) there is sure to be a stricture, and the same remark applies to the circular method. The plan of making a flap from the lower surface is not a good one. Recollect that in any amputation of the penis retraction of the urethra and stricture are things much to be dreaded, but if you turn the urethra well outwards there will be no stricture.

Now as to the removal of lymphatic glands. It is the oblique inguinal set which become enlarged and some of the uppermost of the vertical set, and they may become adherent to the skin, fascia, and femoral vein. The saphenous vein runs through the mass and requires to be carefully ligatured. The superficial external pubic artery may give trouble as the bleeding from it may be very free. The glands get adherent to the femoral sheath and the chief trouble in dissecting them out is the femoral vein. One does not like to tie it and a puncture is very serious. There is a special risk in this situation of erysipelas occurring, as it is a difficult part to disinfect. This risk has to be remembered also in removing tuberculous glands from the groin.

When cancer of the penis is left to itself it kills either by hæmorrhage or by infection of lymphatic glands in the groin. The all-important point is to recognise the cases before the lymphatic glands have become adherent to the vessels and not to mistake them for cases of primary chancres or tertiary growths or for warty growths. A careful microscopic examination of the discharge ought to settle this point and if any doubt still remains, then you should slit up the prepuce. If you carefully do these things it may make a difference of many years of life to your patient.

FREEMASONRY.—*Esculapius Lodge, No. 2410.*—The last meeting for the present Masonic year was held at the Café Royal, Regent-street, W., on April 12th, Bro. Surgeon-Lieutenant-Colonel H. W. Kiallmark, G.J.D., being in the chair.—Bros. Herschell and Earls were admitted to the third degree and Captain Percy J. Probyn, R.A.M.C., was initiated into Freemasonry.—J. H. Bryant, M.D., M.R.C.P. Lond., and T. G. Stevens, M.D., M.R.C.P. Lond., were proposed as members.—Bro. H. P. Blackmore, L.D.S. Eng., was unanimously elected Master for the ensuing year, and Bro. G. Danford Thomas, M.D. Brux., coroner for Central London, was re-elected Treasurer.—There were a large number of members and visitors present; among the latter were Bros. G. Richards, D.G.M., Transvaal; A. Symons Eccles, Master of the Cavendish Lodge; and E. A. Biedermann of the Apollo University Lodge, Oxford.—Bro. Dutton read a letter from the secretary of the Sancta Maria Lodge thanking the lodge for electing the Master of the Sancta Maria Lodge an honorary member of the Æsculapius Lodge.—Bro. Eccles thanked the brethren on behalf of the Cavendish Lodge for the like honour and said that he was delighted to visit the oldest medical lodge with his wardens in his official capacity.—After other routine business had been transacted the lodge was closed. The members and visitors afterwards dined together.

ON THE PULSUS PARADOXUS, WITH SPECIAL REFERENCE TO ITS OCCASIONAL OCCURRENCE ON ONE SIDE ONLY.

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THE term "pulsus paradoxus" has been applied to that form of pulse which becomes smaller or in some cases completely disappears during the inspiratory portion of the respiratory act. Such a pulse is sometimes observed during a quiet and natural inspiration; in other cases a deep inspiration has to be taken to develop the peculiarities. So far as can be judged from the published records of cases it appears usually to occur in the arteries of both sides of the body, but it is an interesting fact, and one bearing intimately on the mechanism which gives rise to such a type of pulse, that it is occasionally met with in the vessels of one arm in a much more marked manner than in those of the other. It is stated (O. Rosenbach [1]) that F. Hoppe [2] was the first to observe the phenomena of the pulse becoming smaller during the act of inspiration and recently the same credit of prior observation has been given [3] to J. Hoppe Seyler. It appears clear, however, that the phenomenon had been observed by Dr. C. J. B. Williams and published by him in 1850,[4] whereas Hoppe's observation does not appear to have been made until August, 1853, and was published in 1854. It was, however, not until Kussmaul published [5] his cases of indurative mediastino-pericarditis in 1873 that special attention was directed to this form of pulse and it has been considered, though wrongly, pathognomonic of that disease. Probably indurative mediastino-pericarditis is one of the most common conditions in which the paradoxical pulse has been observed, but we occasionally see it where we have no mediastinal affection and mediastino-pericarditis may exist without this peculiar form of pulse being present. The paradoxical pulse has been seen in different forms of pericarditis [6] without mediastinitis accompanying the affection, also in cases of pleuritic effusion,[7] in great cardiac weakness, in convalescence from long-standing febrile affections, and in cases of great dyspnœa from narrowing of the air-passages,[8] especially in laryngeal diphtheria before the trachea has been opened in the operation of tracheotomy. It has also been recorded in cases of mediastinal tumour [9] and I have myself seen it in a case of mitral incompetence with dilatation of the heart.[10] Experimentally it has been produced in animals

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[1] O. Rosenbach: Pericarditis Externa und Mediastino-pericarditis, Real-Encyclopädie der gesammten Heilkunde, Band ix., S. 473.

[2] F. Hoppe: Über einen Fall von Aussetzen des Radial-pulses während der Inspiration und die Ursachen dieses Phänomens, Deutsche Klinik, 1854, Band vi., S. 33.

[3] Herr von Leyden at the discussion at the Verein für innere Medizin in Berlin on Gerhardt's communication Über Pulsus Paradoxus und Pulsus Differens, as reported in the Deutsche Medizinal-Zeitung, 1897, p. 46.

[4] C. J. B. Williams: The Prognosis and Treatment of Organic Diseases of the Heart, London Journal of Medicine, 1850, vol. ii., p. 464.

[5] A. Kussmaul: Über schwielige Mediastino-pericarditis und den paradoxen Puls, Berliner Klinische Wochenschrift, 1873, X. Jahrgang, S. 433, 445, 447, and 461.

[6] C. J. B. Williams: The Prognosis and Treatment of Organic Diseases of the Heart, London Journal of Medicine, 1850, vol. ii., p. 464. F. Hoppe: Über einen Fall von Aussetzen des Radial-pulses während der Inspiration und die Ursachen dieses Phänomens. J. West: A Case of Purulent Pericarditis treated by Paracentesis, &c., Brit. Med. Jour., 1883. E. Boehr: Über einen zweiten Fall von Pulsus Paradoxus in Folge von Pericarditis ohne Mediastinitis, Berliner Klinische Wochenschrift, 1883, No. 13. Graffner: Pulsus Paradoxus bei eitriger Pericarditis und doppelseitiger Pneumonie, ibid., 1876, No. 27. *Stricker: Pulsus Paradoxus bei Pericarditis Tuberculosa, aber ohne Mediastinitis, Charité-Annalen, Band ii. (1875), 1877.

[7] Bauer: Cyclopedia of the Practice of Medicine, edited by H. von Zeimssen. London: 1876, vol. vi., p. 653.

[8] E. M. Brockbank: Pulsus Paradoxus in Acute Laryngitis, Brit. Med. Jour., June, 1893. *Baumler: Deutsches Archiv für Klinische Medicin, xiv., 456. Riegel: Berliner Klinische Wochenschrift, 1876, No. 47.

[9] Petrina: *Prager Medicinische Wochenschrift, 1877, No. 19. (Dobell's Reports, 1877.)

[10] Indurative Mediastino-pericarditis, by Thomas Harris, Medical Chronicle, 1894-95, and separate publication, London, 1895.

*References marked with an asterisk have not been accessible to the writer.

by compression of the inferior vena cava at its entrance into the auricle during the inspiratory period,[11] and, lastly, a slight diminution in volume of the pulse during inspiration has been observed in sphygmographic tracings taken from apparently healthy individuals.[12]

A distinction has been asserted to exist between the pulsus paradoxus as seen in indurative mediastino-pericarditis and that which is met with physiologically and under various other conditions. Schreiber,[13] for example, states that the special peculiarities and characteristics of the pulsus paradoxus as seen in cases of mediastino-pericarditis are: (1) that there is marked diminution in the volume or complete disappearance of the pulse of all arteries and not only of that of the radial vessels during inspiration, and especially in the second half or at the end of that act; (2) that it is impossible to replace the paradoxical pulse by a prolonged and sustained inspiration; (3) that the true pulsus paradoxus does not require for its development the inspiration to be a deep one; (4) that the peculiar pulse intermission is accompanied by a regular action of the heart; and (5) that the heart shows no weakening of its action during the period whilst an inspiration is being made (4 and 5 might, however, be modified in cases where there is at the same time endo- or myo-carditis). Schreiber concludes his reference to this point with the statement that, in his opinion, if the pulse presents the above-mentioned characteristic points, and especially if associated with them is inspiratory swelling of the cervical veins, the condition of the pulse is so distinctive and differs so much from similar pulse phenomena that it may be regarded as pathognomonic of indurative mediastino-pericarditis.

I am afraid, however, that although these signs may be important as distinguishing the pulsus paradoxus met with in indurative mediastino-pericarditis from that met with in other conditions that not all of them have that value which the author referred to is inclined to place upon them. In the case recorded below we have what is apparently a typical one of indurative mediastino-pericarditis where the only marked paradoxical pulse is found in the left radial and left brachial arteries. The right radial and right brachial arteries only show the phenomenon in a very slight degree and it cannot be detected in the vessels of the other parts of the body and also there is evidence, as shown in the sphygmographic tracings, No. 3A and No. 3B, that the paradoxical pulse in this case is replaced by nearly a full pulse when a long and sustained inspiration is made.

There appear to be extremely few observations as to the occurrence of the pulsus paradoxus as an unilateral phenomenon. One of the best of such cases was recorded by Gerhardt[14] at the beginning of 1897, where, in a woman aged 66 years, who had mitral insufficiency with dilatation of the heart, bronchial catarrh, ascites, and dropsy of the lower extremities, the pulse in the left radial, the left brachial, and the left carotid arteries was smaller than on the right side; at the left radial at the height of the inspiration some of the beats were not perceptible to the finger, but the sphygmographic tracings showed that they were not entirely absent though smaller than the waves in the right radial. In that case, however, it is evident from the syhygmographic tracings given that there was a slight irregularity in the force of the waves in the right radial as well as in the left. Gerhardt explained the case as being probably due to a narrowing of the aortic arch at the orifice of the left carotid and left subclavian arteries, the narrowing being probably due to atheroma which in consequence of weakness of the heart had the effect of producing a small pulse during inspiration in the vessels derived from those main trunks. In a later communication[15] Gerhardt records a second case where he had an opportunity of making a post-mortem examination. The second case was that of a woman, 69 years of age, who had a sudden cerebral attack associated with paralysis of the right leg. In this case it was noticed shortly after admission to the hospital that the left radial pulse was considerably smaller than the right and that whilst the pulse-beats, as perceived by the finger on the right side, numbered 112 those on the left were only 102 per minute. The patient died suddenly a few days after admission into hospital and at the post-mortem examination in addition to recent cerebral softening there were found acute pleurisy and pericarditis, fatty and calcareous deposits in certain arteries, and the cross section of the right subclavian artery measured 20 millimetres whilst that of the left only measured eight millimetres and there was a slight difference also between the right and left carotid vessels. As Luschka[16] gives the usual diameter of the subclavian on the left side as 8·5 millimetres and the right 9 millimetres it is evident that there was a considerable dilatation in Gerhardt's case of the subclavian artery of the right side, the left subclavian being narrow as compared with the right. Gerhardt concludes that the pericarditis was the cause of the paradoxical pulse in his case and the relative narrowing of the left subclavian the cause of the pulse difference, the weakening of the arterial stream by the pericarditis affecting the pulse at the left radial in consequence of the relative narrowing of the left subclavian vessel. Strube, Gerhardt's assistant, was able in healthy individuals, by pressure on the arm vessels, to cause the pulse on that side to become smaller during inspiration. Gerhardt cites a case recorded by Heubner[17] where a woman, 52 years of age, with a fatty heart had an abnormally small pulse in the right radial and some of the beats failed to reach the wrist and where post-mortem examination showed the right subclavian artery to be thrombosed. He also refers to a case recorded by Mainzer[18] of left pleuritic effusion where there was a pulsus paradoxus of the left side which disappeared when the effusion was removed by puncture and reappeared on re-accumulation of the fluid and disappeared again when recovery took place. The pulse even then, however, was always smaller on the left side than on the right. Cimler[19] in a communication on Pulsus Differens, by which one understands a pulse which shows a difference in the sphygmographic tracings in corresponding arteries of the two sides, observes that the onychograph of Hertz makes it now possible to divide cases of pulsus paradoxus into two categories which can be distinguished by the use of that instrument. The two categories are (1) those where the difference in the two pulses is due to central narrowing of the vessels; and (2) where the difference is due to loss of the elasticity of the vessels caused by some pathological change. Cimler says that Hertz himself published a case in which the one radial artery was sclerotic and consequently gave a very small sphygmographic tracing whilst the corresponding vessel of the other side gave an unusually large wave. The onychogram showed, on the contrary, a reverse condition, the smaller radial pulse on the right side corresponding to a very marked nail pulse, the marked radial pulse to a small nail pulse. A similar condition was observed by Cimler himself who argues, therefore, that we should only conclude that the pulse difference is not of central origin when the results of the onychograph and sphygmograph agree. I must admit that this reference to the onychograph was the first time that my attention had been drawn to the existence of such an instrument and as I have never seen or used the instrument I am unable to comment on its value. The case which has been under my observation is briefly as follows.

Indurative mediastino-pericarditis; dilated heart, bronchitis, general anasarca and ascites; chronic peritonitis; inspiratory swelling of the veins of the neck; pulsus paradoxus more marked in the arteries of the left than in those of the right arm.—The patient, a girl, at present 16 years of age, was first seen by me a little over two years ago, in October, 1896. She was then admitted to the Manchester Royal Infirmary complaining of swelling of the abdomen, which

[11] O. Rosenbach: Experimentelle Untersuchungen über die Einwirkung von Raumbeschränkungen in der Pleurahöhle auf den Kreislaufsapparat und namentlich auf den Blutdruck, nebst Beobachtungen über den Pulsus Paradoxus, Virchow's Archiv, Band cv., S. 215.

[12] Sommerbrodt: Gegen die Lehre vom Pulsus Paradoxus, Berliner Klinische Wochenschrift, 1877, No. 42. F. Riegel: Über die Respiratorischen Aenderungen des Pulsus und den Pulsus Paradoxus, Berliner Klinische Wochenschrift, 1876, No. 26. Ibid., 1887, No. 45, and in Gerhardt's Handbuch der Kinderkrankheiten, Band iv., S. 250. T. Harris: Medical Chronicle, 1894-95.

[13] Julius Schreiber: Archiv für Experimentelle Pathologie und Pharmacologie, Leipsic, 1880, Band xii., S. 184.

[14] C. Gerhardt: Pulsus Paradoxus einer Seite, ungleiche Pulszahl der Armarterien, Berliner Klinische Wochenschrift, Jan. 4th, 1897.

[15] C. Gerhardt: Zweite Mittheilung, Berliner Klinische Wochenschrift, April 5th, 1897.

[16] Luschka: Ibid.

[17] * O. Heubner: Fall von Thrombose der A. subclavia dextra in Folge von Endarteritis, Archiv der Heilkunde, 1868, S. 165, quoted also in Gerhardt's first communication.

[18] * L. Mainzer: Zwei Fälle von paradoxen Pulsus, Prager Vierteljahrschrift, 1879, Band i., S. 93. Pulsus Paradoxus einer Seite, ungleiche Pulszahl der Armarterien, von C. Gerhardt, Berliner Klinische Wochenschrift, Jan. 4th, 1897.

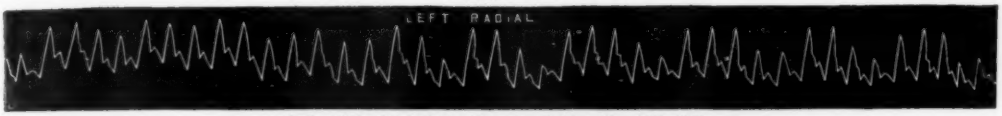
[19] * Cimler: Über Pulsus Differens. Abstract of paper from the Wiener Medicinische Presse in Deutsche Medizinal-Zeitung, 1897, p. 1007.

was enormously distended with fluid, slight swelling of the feet, palpitation, and some cough. It appeared from the history that she had never enjoyed good health since she had had scarlet fever when two years of age. She had been subject to bronchitic attacks ever since that time. In addition she had measles and whooping-cough and her bronchitis had been worse during the two years previously to her admission. There was no history of rheumatism. About two years ago she first noticed the abdomen beginning to swell and she said that it had been enlarged ever since, but that it had rapidly increased in size during the two months previously to her coming to the infirmary, and during the same time there had been slight swelling of the feet during the day which would disappear in the evening when she went to bed. Two years before I saw her she was in the Children's Hospital at Pendlebury and Dr. Hutton, under whose care she was, tells me that at that time there was evidence of much bronchitis and emphysema. "The abdomen, however, was natural; the abdominal organs were normal in area and position." She had also at that time enlarged tonsils which were excised. When I first saw the patient (October, 1896) the chief feature was the enormous distension of the abdomen which measured at a point two and a half inches above the umbilicus 32 inches in circumference. The abdomen was everywhere dull and nothing could be made out as to the size of the liver or spleen at that time. There was very slight œdema of the lower extremities, but quite insignificant as compared with the amount of fluid in the abdominal cavity. The abdomen was tapped a few days after admission, 243 ounces of clear yellow fluid being withdrawn. On the following day the lower edge of the liver could be felt two inches below the costal margin in the right mammary line and two inches above the umbilicus in the median line. No enlargement of the spleen could be detected. The cardiac apex beat was very feeble and very indistinctly felt in the sixth intercostal space below and internal to the left nipple. The area of cardiac dulness was small, the heart being apparently covered by emphysematous lung. The heart sounds were distinct; there were no murmurs. There was a little muco-purulent expectoration. No dulness was noticeable over the lungs, but sonorous and sibilant rhonchi were audible all over. There was no blueness though the venules on the cheek were distinct. The external jugular veins in the neck were very prominent, being markedly distended, and when a deep inspiration was taken the right external jugular became more distended during the inspiratory period In other words, there was inspiratory swelling of the right external jugular vein. The condition of the pulse will be referred to more in detail immediately. It may be stated here, however, that it was 105 per minute and presented a peculiar irregularity associated with respiration on the left side, but that such irregularity was not noticed by the finger placed upon the right radial artery, though the sphygmograph showed that the inspiratory act did slightly affect the right radial pulse. The urine was of specific gravity 1021, acid, contained a trace of albumin and a few red blood corpuscles, but no casts were found. The temperature was generally elevated in the evening to about 99° F. and was normal in the morning. Since the patient first came under my observation she has spent the chief part of her time in the infirmary or at the Convalescent Hospital. She has scarcely ever been free from bronchitis, but she was usually admitted on account of the distension of the abdomen which had to be repeatedly tapped. It has been tapped on 12 occasions and the amount removed has varied from 106 to 290 ounces. The relief given by the tapping was usually of very short duration and in the course of about from 10 days to a fortnight after each tapping the abdomen was as full as ever again and ought to have been tapped very much more frequently than it was. The patient, however, had a great objection to the small operation and preferred to put up with the discomfort of the enlarged abdomen rather than have it very frequently tapped. Her objection to the tapping became so marked that in April, 1898, my colleague, Mr. Southam, at my request had the patient put under chloroform, made an incision, and drained the abdominal cavity. As long as the drainage-tube was kept in the abdomen did not become distended, but when the wound was allowed to heal about a month after the operation the abdomen became as large as ever and has remained so ever since.

For the past 12 months the dropsy of the lower extremities has become extremely marked and nothing except the introduction of Southey's trocars has given any relief and then only of a partial and temporary nature. The abdominal wall and the subcutaneous tissue of the lower part of the back has also become extremely œdematous. The patient for months past has had marked orthopnœa and has had always to sleep propped up in bed; even during the day she is not able to assume the recumbent posture. The subcutaneous tissue of the chest and the upper extremities have not become œdematous, but distinct blueness of the fingers exists. The circulation has become much more feeble, the heart's impulse is no longer to be seen or felt, but from percussion one cannot ascertain that there is any considerable cardiac dilatation, the presence of emphysema probably accounting for the absence of increased cardiac dulness. There has never been any mediastinal dulness or any paralysis of either vocal cord. The urine has sometimes been free from albumin and at other times it has contained a trace. For the past eight months it has been impossible to ascertain anything as regards the condition of the liver, spleen, or other abdominal organs in consequence of the enormous distension of the abdomen. The temperature has varied, being usually, however, elevated in the evening and normal in the morning. The height of the evening rise has varied considerably. Generally it was about 99°, but frequently there would be periods when it was much higher, reaching 102° and even 103·5°, and such rises extended over periods from a few days to several weeks and were apparently associated with attacks of catarrhal pneumonia. Occasionally, but very rarely, the temperature would be normal for a few days both morning and evening. The sputum has been examined for tubercle bacilli, but always with negative results. The case appears to be one of indurative mediastino-pericarditis with dilated heart, bronchitis, and anasarca. The more marked accumulation of fluid in the abdominal cavity than in the subcutaneous tissue is probably due to associated chronic peritonitis—a complication which is not infrequent in cases of indurative mediastino-pericarditis.

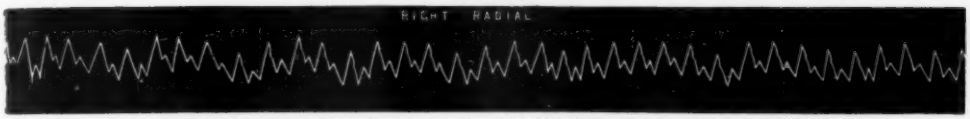
The condition of the pulse in the above case during the two years and four months in which the patient has been under observation has always presented in the main the same characteristics and what change has taken place has been apparently due to gradually increasing feebleness of the circulation. When she first came under my care the pulse, counted in each radial, was 105 per minute. On both sides it was a small, easily compressible pulse. On the left it was very much more irregular than on the right—in fact, on the right side scarcely any irregularity was noticeable though it will be seen from the sphygmographic tracings that such did exist (Fig. 1 B). The irregularity on the left side was clearly associated with the respiratory act and when the patient took a deep breath the pulse at the left radial became quite imperceptible, whereas if any change and noticeable at all on the right side it was very slight was on some occasions no change whatsoever could be noticed when a deep breath was taken. A deep inspiration affected also the left brachial pulse. No difference could be detected between the pulse of the right and of the left carotid, the movement of the sterno-cleido mastoid muscles and the other accessory muscles of respiration rendering it difficult to form an opinion as to the relative difference of the two carotid pulses when a deep inspiration was taken. No difference could be felt in the femoral or posterior tibial arteries of the two sides, but the œdema of the lower extremities which existed would render any slight difference in these vessels imperceptible. A large number of sphygmographic tracings were taken of the right and left radial vessels at different periods of the patient's illness. A selection of these tracings is here given. It will be noticed that the tracing of the left radial (Fig. 1 A) shows a very much greater irregularity than does the tracing of the right radial (Fig. 1 B). During the earlier part of the patient's illness when a deep inspiration was taken the pulse at the left radial (Fig. 2 A) became completely obliterated and the sphygmogram showed no pulse wave whatsoever during the deep inspiratory act, but although there was evidence of some slight influence of a deep inspiration on the right side (Fig. 2 B), such influence was extremely slight, especially when compared with what was noticeable in the left radial tracing. When a deep inspiration was taken and the breath held at the end of that act it will be seen that the pulse in the left radial gradually returned, the successive beats getting larger and larger, until after the breath had been held about 25 seconds the individual waves were nearly as high as during ordinary breathing (Figs. 3 A and 3 B). The effects on the

FIG. 1 A.



Left radial pulse during ordinary respiration; Jan. 26th, 1898.

FIG. 1 B.



Right radial pulse during ordinary respiration; Jan. 26th, 1898. (See also note to Fig. 2 B.)

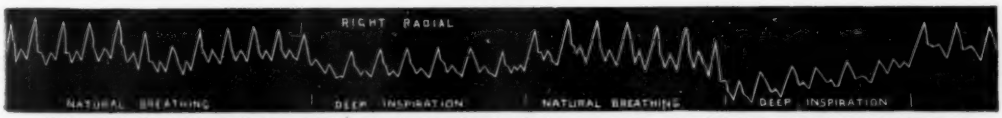
FIG. 2 A.

Left radial pulse during ordinary respiration and when a deep inspiration was taken; April 12th, 1897.

FIG. 2 B.

Right radial pulse during ordinary breathing and when two deep inspirations were taken; April 12th, 1897. The individual pulse-beats are stronger and the pulse-rate slower in this tracing than in the next one (Fig. 2 C) which was taken about nine months later (Jan. 28th, 1898), and also than in Fig. 1 B which was taken on Jan. 26th, 1898. Whether the difference in the height of the percussion waves was due to a less pressure having been employed in the case of Fig. 2 B than in the other instances or, as appears to be more probable, was due to an actual difference in the strength of the pulse-beats I am unable to say.

FIG. 2 C.



Right radial pulse during ordinary respiration and when two deep inspirations were taken; Jan. 28th, 1898. (See also note to Fig. 2 B.)

FIG. 3 A.

Left radial pulse during ordinary respiration and then when a deep inspiration was taken and the breath held, at the end of the full inspiration, as long as possible; April 12th, 1897.

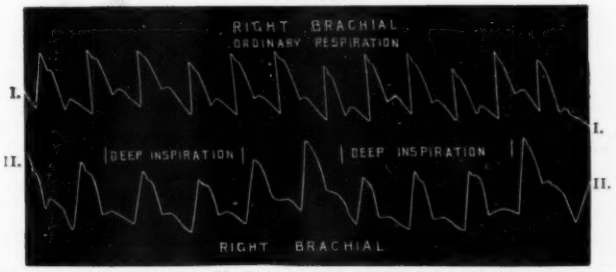
FIG. 3 B.

Left radial pulse. A, Point at which the instrument was stopped for 10 seconds, during which time the breath was held at the end of a deep inspiration. After that period the instrument was again started, but the breath was still held all the time during which the remaining part of the tracing was being recorded. The instrument was stopped for 10 seconds simply because we had not sufficiently long papers to make the record required; April 10th, 1897.

FIG. 4 A.

I., Left brachial during ordinary respiration. II. Left brachial when two deep inspirations were taken. Feb. 19th, 1897.

FIG. 4 B.



I., Right brachial during ordinary respiration. II., Right brachial when two deep inspirations were taken; Feb. 19th, 1897.

The following tracings (Figs. 5 A, 5 B, 6 A, 6 B, 7 A, and 7 B) have all been taken recently and on the same day (Feb. 6th, 1899) and for them I am indebted to the house physician, Mr. H. Osborne.

FIG. 5 A.

Left radial during ordinary respiration; Feb. 6th, 1899.

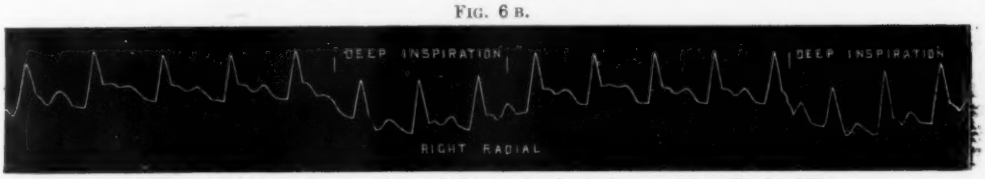
FIG. 5 B.

Right radial during ordinary respiration; Feb. 6th, 1899.

FIG. 6 A.

Left radial during ordinary respiration and when two deep inspirations were taken; Feb. 6th, 1899.

FIG. 6 B.

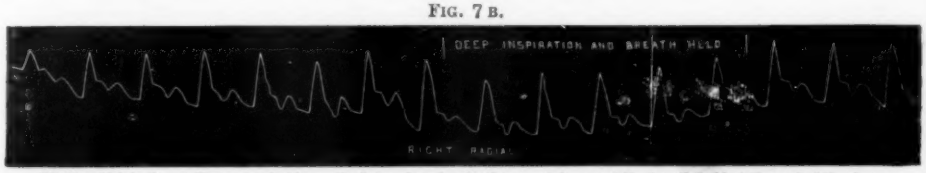


Right radial during ordinary breathing and when two deep inspirations were taken; Feb. 6th, 1899.

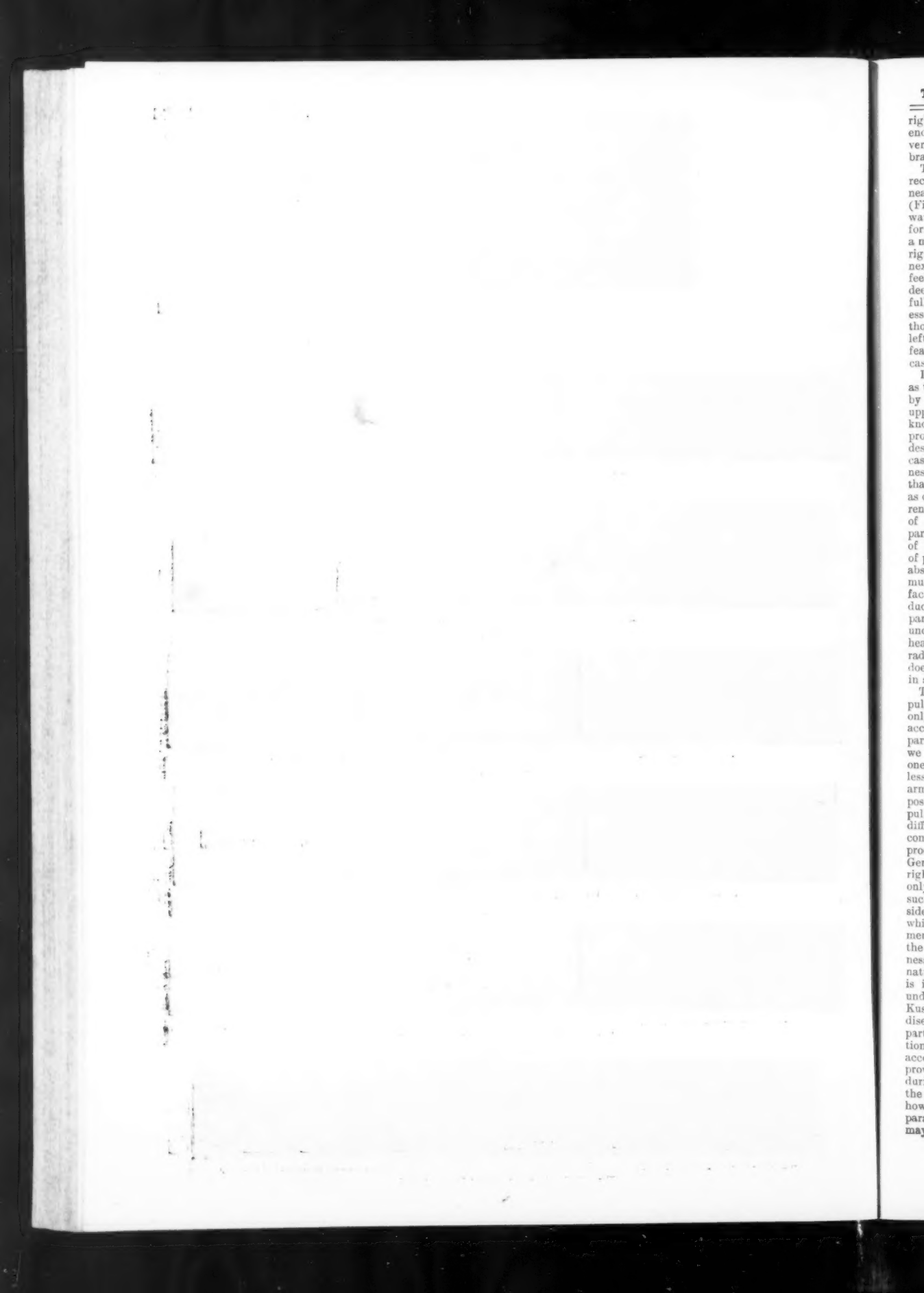
FIG. 7 A.

Left radial during ordinary respiration and when a deep inspiration was taken and the breath held at the end of the deep inspiration as long as possible; Feb. 6th, 1899.

FIG. 7 B.



Right radial during ordinary respiration and when a deep inspiration was taken, and the breath held at the end of the deep inspiration as long as possible; Feb. 6th, 1899.



right radial of taking a deep breath and holding it at the end of the inspiration can be seen from the tracings to be very slight (Fig. 7B). The tracings of the left and right brachial are shown in Figs. 4A and 4B.

The chief difference noticeable in the tracings taken recently (Feb. 6th, 1899) as compared with those taken nearly two years ago (April 9th, 1897) will be seen (Figs. 5A, 5B, 6A, 6B, 7A, and 7B) to be that the individual waves in both the left and right radials are smaller than they formerly were; that a deep inspiration, although still having a marked effect on the left radial pulse as compared with the right, has less influence now than formerly, but in this connexion it must be remembered that the patient is extremely feeble, quite bedridden, and is evidently fatigued by taking a deep breath and can only hold the breath at the end of a full inspiration for a very short time. There is, however, no essential difference between the tracings taken recently and those taken about two years ago. The difference between the left and right radials is still marked and we have the same features noticeable in the left radial as was formerly the case.

It is impossible to make any certain or dogmatic statement as to why the pulse in the vessels of the left arm is affected by an inspiratory act whilst that in the arteries of the right upper extremity is but very slightly so influenced. Our knowledge of the mechanism which lies at the root of the production of the pulsus paradoxus leaves yet much to be desired, but it does appear that, considering the type of cases in which such a pulse has been noticed, cardiac weakness is nearly always if not constantly present. I am aware that the fact of the pulsus paradoxus having been regarded as occurring in people in a good state of health at first sight renders it improbable that cardiac weakness is one of the essential factors in the production of pulsus paradoxus, and it is well known that the majority of cases of cardiac weakness are unassociated with such a type of pulse. In reference to the latter fact—that is, the usual absence of pulsus paradoxus in cases of cardiac weakness—we must remember that although that weakness may be one factor it may not be the sole condition and agent in producing this peculiar pulse, and that as regards the pulsus paradoxus occurring in health it is rarely if ever developed under such conditions in its most perfect form. In apparent health you may certainly occasionally get the pulse in the radials becoming smaller during a deep respiration, but one does not get it becoming obliterated as is seen for instance in some cases of indurative mediastino-pericarditis.

The records of cases like those of Gerhardt where the pulsus paradoxus is found in a distinct form on one side only are most valuable in helping us to form a more accurate idea of what is the mechanism of the pulsus paradoxus. In those cases, as in the one here recorded, we have an extremely pronounced pulsus paradoxus on one side and either not present at all or only in a much less marked condition in the corresponding vessels of the arm on the other side. It would appear further from the post-mortem examinations which have been made, where the pulsus paradoxus is a unilateral phenomenon, that a relative difference in the size of the orifice of one subclavian as compared with the other was an important feature in the production of the type of pulse in question. In one of Gerhardt's cases, as above recorded, whilst the size of the right subclavian was 20 millimetres that of the left was only eight millimetres. If, therefore, in my own case such a difference between the vessels of the two sides exists it would lend strong support to the view which Gerhardt put forward that the unilateral phenomenon in his case was due to the narrowing of the left subclavian artery plus the cardiac weakness which was also present. As regards the possible nature of the supposed narrowing in the above case it is impossible to say very much. The case appears to be undoubtedly one of indurative mediastino-pericarditis and Kussmaul's old explanation of the pulsus paradoxus in that disease, that it was due to adhesions between the anterior part of the chest-wall and the aorta which during inspiration caused a narrowing of the main arterial stem, would account for the unilateral phenomenon in the above case, provided adhesions existed such as would cause a narrowing during inspiration of the left subclavian while not affecting the innominate trunk of the right side. A strong argument, however, against such a simple explanation is that a pulsus paradoxus occurring in the vessels of both upper limbs may exist in cases of simple pericarditis and other conditions where great cardiac weakness exists without there being any adhesions to drag upon and narrow the aorta. It may happen that the explanation of the unilateral pulsus paradoxus in this case is due to a congenitally small left subclavian artery or to a left subclavian which has been narrowed by some pathological change in the wall of the artery, exactly as an atheromatous process may cause a relative difference in the lumen of the two subclavian vessels. It appears, however, useless to surmise as to what may be the cause of the phenomenon in the present case, since it is a question which can only be decided by visual examination. It is interesting to note that certain other types of pulse may be met with as a unilateral phenomenon. This has recently been pointed out in reference to the bisferiens pulse by Dr. Walter Broadbent.[20]

ADDENDUM.

Since the above was written the patient whose case was the subject of this communication has died. Death took place on March 23rd, 1899, the immediate cause of death being apparently an acute phlegmonous inflammation of the œdematous abdominal wall. The post-mortem examination was made the following day by Dr. Kelynack, the pathological registrar to the infirmary, and the following is an abstract of his post-mortem record.

The face was cyanosed and puffy; there were stigmata on the cheeks and the veins of the neck were distended. The abdomen was large and prominent, the wall was extremely œdematous and presented a dusky erythematous appearance. The girth at the umbilicus was 36½ inches, whilst the girth of the chest at the level of the nipples was only 31 inches. Below the umbilicus was a scar one and three-quarter inches in length, the site of the previous abdominal section. There was marked œdema of the lower extremities but no appreciable anasarca of the upper limbs. It took a long time to remove the operculum on account of the adhesions on its posterior aspect which had to be carefully dissected off. After removing the operculum a mass of fibrous tissue was presented uniting all the organs at the anterior part of the chest together which completely concealed the heart and the anterior parts of the lungs. This united the pleuræ, pericardium, and mediastinal structures in one blended mass. Throughout the mediastinum, especially at its anterior and middle portions, there was a marked increase of fibrous tissue causing extensive matting and binding of the mediastinal structures to adjacent parts. This fibrous tissue was œdematous and in parts congested and where it was closely adherent to the external part of the pericardium some slight calcareous deposit was present. The adhesions closely surrounded the roots of the large vessels and extended upwards to the root of the neck. It was as though the adhesions formed a prolonged tendon to the sterno-cleido-mastoid muscles of either side, the adhesions extending from the attachment of the sterno-cleido-mastoid muscles to the sternum and clavicle downwards as far as the pericardium and diaphragm, and it was evident that the contraction of the accessory muscles of respiration would have produced a marked dragging effect upon the vessels in the mediastinum and not improbably upon the heart itself, as the pericardium was totally adherent to the heart, no pericardial cavity remaining. The innominate veins and the superior vena cava were very large and distended and were apparently compressed by the mediastinal adhesions, but one could not say that the adhesions were more marked on one side than on the other. Both arteries and veins were closely surrounded by fibrous tissue, being actually embedded in the same. The vessels arising from the arch of the aorta were carefully dissected, but one could not say from the post-mortem appearance that more marked adhesions were present on the left than on the right side nor was there any appreciable difference in the circumference of the main arterial trunks. The following gives the circumference of the various vessels: circumference of the innominate artery at its origin, two centimetres; circumference of the innominate immediately below its division, 1·8 centimetres; circumference of the right subclavian at origin, 1·7 centimetres; circumference of the right subclavian six inches from origin, 1·2 centimetres; circumference of the left subclavian at origin, 1·5 centimetres; circumference of the left subclavian

[20] Pulsus Bisferiens, Brit. Med. Jour., Jan. 14th, 1899, p. 75.

10 centimetres beyond origin, 1·2 centimetres; circumference of the right carotid at point of origin, 1·7 centimetres; circumference of the right carotid at point six inches beyond origin, 1·6 centimetres; circumference of the left carotid at origin, 1·8 centimetres; circumference of the left carotid at 10 centimetres beyond origin, 1·8 centimetres; circumference of the descending thoracic aorta, 3·5 centimetres; circumference of the abdominal aorta, three centimetres; and circumference of the abdominal aorta immediately above the division into the common iliacs, 2·8 centimetres.

It will be seen that the difference in the size of the lumen of the vessels supplying the upper limbs on the two sides presented quite an insignificant difference. The interior of the vessels was quite healthy, presenting no signs of atheroma. The bronchial glands were large and deeply pigmented. Both pleural cavities were practically obliterated except a small space over the apex of the left lung. What adhesions existed over the upper part of the left lung were easily broken down, but over the lower part of the same lung, especially at its lower posterior part, there were dense adhesions of almost cartilaginous consistency, firmly binding the lungs to the ribs. The cavity of the right pleura was obliterated except over the apex of the lung by firm fibrous adhesions. In consequence of these dense adhesions it took a long time to remove the thoracic viscera from the chest. The thickened pleura over the lower lobes of both lungs posteriorly was half an inch in thickness and at the lowermost part fully an inch. There was no sign of tubercles in connexion with the pleuræ or lungs. The lungs were compressed by the thickened pleura, but appeared to be more or less crepitant throughout. The heart, as before said, was adherent, not only to the external layer of the pericardium, but the external layer of the pericardium was adherent to the chest wall and to the lungs and mediastinal tissue. The heart was somewhat enlarged, but as the whole preparation was required for museum purposes it was considered advisable not to dissect and remove the organ from its connexions. An antero-posterior incision through its substance, passing through the right into the left ventricle, was, however, made. The muscular walls of the ventricles except for being slightly increased in thickness appeared to be healthy.

With regard to the abdomen there were general peritonitic adhesions uniting the coils of the intestines together and these to the liver and spleen. The peritoneum over the liver was greatly thickened and on the right lobe it presented a white, porcelain-like appearance. Over the anterior abdominal wall the parietal peritoneum was also thickened and of a white, porcelain-like appearance. There was no evidence of tuberculosis in the peritoneum or in the mesentery except a calcareous mass more or less spherical about half an inch in diameter situated in front of the right kidney. The mucous membrane of the intestines was generally pale and anæmic with patches of congestion in some places, but there was no ulceration. The liver was closely surrounded by adhesions with a markedly thickened capsule, as before described. The whole organ was much compressed by the adhesions and the thickened capsule; its transverse diameter measured 21 centimetres; it was not apparently increased beyond its normal dimensions. On transverse section the organ seemed to be in a condition of passive venous congestion; the whole organ was of dense consistency and there was possibly a certain degree of cirrhosis present. Subsequent microscopical examination showed that although there were strands of fibrous tissue extending into the liver substance from the thickened capsule there was little or no increase of the hepatic interstitial tissue beyond a short distance from the surface of the organ. The liver cells showed various signs of degeneration. As it was desired to keep the whole preparation for a museum specimen the various organs could not be detached for their weight to be taken. Both kidneys were enlarged, the vertical measurement of each being 10 centimetres; both were markedly congested. The spleen was enlarged; it measured 13·5 centimetres by nine centimetres, was firmly adherent to surrounding parts, and was of a dark-red colour and firm consistency. The stomach and pancreas except for surrounding adhesions presented nothing unusual. The uterus and ovaries were of infantile type, surrounded and matted together by fibrous adhesions. The brain was not allowed to be examined.

The post-mortem examination confirmed the diagnosis of indurative mediastino-pericarditis with its common complication of chronic peritonitis, but we cannot say that it has completely solved the problem as to why the pulsus paradoxus was present in so marked a form in the arteries of the left arm only. Certainly we could not satisfy ourselves that there was any particular adhesion which during an inspiratory act would drag upon and kink the left subclavian artery. As far as we could see, the adhesions were equally numerous and of a similar nature and arrangement around all the vessels springing from the arch of the aorta. All the vessels springing from that part of the main arterial trunk were embedded in a mass of dense fibrous tissue. Not only around the origin of the main arteries to the neck and to the upper extremities were the adhesions apparently similar on the right and on the left of the median line, but all down the mediastinum the adhesions were similar on the two sides of the body. The only difference in the arrangement of the newly-formed fibrous tissue in the thorax on the one side as compared with that on the other was that the right pleura was thicker over the lower part of the right lung than was the corresponding part of the left pleura, and also that the pleuritic adhesions were more general and firmer over the upper part of the right lung than over the upper part of the left organ.

Although we could not actually see any difference in the arrangement of the adhesions around the main vessels proceeding to the upper limbs on the two sides of the median line it appears improbable that the arrangement of the adhesions was such that they took no part in the production of the pulsus paradoxus of the left side. In other words, it is probable that, although we could not demonstrate to our satisfaction that the adhesions round those main vessels were different on the two sides, the adhesions were the important elements in the production of this peculiar paradoxical pulse. It was suggested to me that most probably the explanation of the unilateral pulsus paradoxus in this case lay in the greater length and the narrow lumen of the left subclavian artery as compared with the length and lumen of the innominate artery—that adhesions in the mediastinum would be likely to have a greater effect on the narrow subclavian and more likely to cause a kinking of that vessel than would adhesions connected with the innominate artery. This explanation appears a not improbable one, but whether it is the true one we cannot say. It appears, however, to be the most feasible explanation of the occurrence in this case of a pulsus paradoxus which was much more marked in the arteries of the left than in those of the right arm.

Manchester.

CERTAIN POINTS IN THE PATHOLOGY OF THE PERICARDIUM.[1]

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WHEN a large quantity of venous blood is driven into the right heart the pericardium supports the heart so as to prevent over-distension. It prevents dilatation beyond a certain point at which the walls of the heart are thick enough and strong enough to empty themselves at each recurring systole. The pericardium bears to the heart muscle the same mechanical relation as the leather case does to the inside case of a football or the outer case to the inner case of a Dunlop tyre. As I believe this observation on the function of the pericardium to be original you will perhaps allow me to demonstrate it. (The full account of the experiments will be found in the Proceedings of the Physiological Society, March 12th, 1898.)

The pericardium is a very strong and inextensile membrane. Strips of it rolled into cords will bear a very great strain without stretching or snapping. If an entire pericardium is inflated by a bicycle pump it ruptures at a pressure of from one and a quarter atmospheres to two atmospheres which is many times greater than arterial blood-pressure. It stretches very little before it ruptures. The pericardium limits the capacity of the heart by about one half. The excised heart of a cat in its pericardium was squeezed empty and then distended with saline solution at about a venous pressure. The amount required to fill it was

[1] A paper read before the Medical Society of London on March 27th, 1899.

noted and the pericardium was then freely opened. The heart then took as much saline again before it was distended. The extra quantity of saline was mostly received by the right auricle and ventricle. Experiments upon frogs and cats and dogs—the latter animals under anæsthesia—showed that in these the pericardium supported the pulsating heart, especially the right heart and during diastole. The heart was supported not only when a large quantity of blood was forced into it but also when it was passively dilated by pushing the chloroform.

We must now consider the circumstances which lead to such engorgement of the right heart that it is necessary that it should be supported by the pericardium. In the first place every contraction of the muscles of the limbs will flatten the deep veins and suddenly inject into the superior or inferior vena cava, and so into the right heart, a very considerable quantity of blood. The venous blood is returned from the legs against the action of gravity by this pumping action of the skeletal muscles of the legs. The most frequent and powerful cause of sudden engorgement of the right heart with blood, however, is the active working of what has been called by Dr. Leonard Hill and myself the respiratory pump. The object of this pump is to raise the blood from the capacious sinuses of the abdomen and when the vascular flow is rapid, as it is during active exercise, each stroke of this respiratory pump will drive a considerable wave of blood through the heart.[2]

We must pause for a moment to consider this respiratory pump and the important action of the skeletal muscles in carrying on the circulation. The researches which have been carried out by Dr. Leonard Hill and by myself would seem to show that in man the heart cannot carry on the circulation alone for any length of time in the erect position—that the action of the skeletal muscles is necessary to secure the return of venous blood from the legs and the abdomen. This is illustrated by the death of people who have been crucified. After a day or so œdema of the feet appeared; this spread until the heart was so depleted of fluid that it could not supply the brain. When hutch-bred rabbits are held up by their ears for five or 10 minutes the blood accumulates in their abdomen to such an extent that their brains become anæmic, their corneæ become insensitive and their pupils dilated, and they soon die.[3] In man the heart is a pump which is situated above its reservoir or well, the abdomen (see figure, R.H.). At each relaxation it must fill itself from the great veins placed vertically below it. In all such pumping arrangements there are two means of raising the required fluid—either by sucking it up from above or by driving it up from below. Both these methods are employed to keep the heart supplied with venous blood. Every inspiration produces a negative pressure in the thorax (see figure, 2) and therefore in the right heart, and venous blood is sucked from the abdomen into the heart and is driven at each systole into the lungs. This suction pump is all-sufficient during rest and quiet exercise, but during violent exercise and exertion, when the full flood of the circulation is pouring through the dilated arterioles of the muscles and the stroke of the heart pump is both deeper and quicker, the blood must be lifted more rapidly and supplied to the heart in fuller volume. It is then that the abdominal force-pump comes into action.

When we consider the anatomy of the abdomen we find that the viscera are contained in a muscular sphere (see figure). Above is the dome of the diaphragm, and below the basin of the levator ani, closing the outlet of the pelvis. Its walls are formed in front by the recti and behind by the quadrati lumborum muscles, and at the sides by the oblique and transverse muscles. Its veins are large and flaccid and capable of containing all the blood of the body were they not supported by this muscular sphere. During vigorous exertion this sphere of skeletal muscle contracts with each inspiration and drives the blood from the great venous sinuses through the aperture for the inferior vena cava in the diaphragm, directly into the right heart. As this occurs at the same time as suction is exerted from the thorax the maximum flow of venous blood is effected. When we consider that the limbs and the abdomen frequently contract simultaneously and violently in such exertions as running or lifting weights it will at once be perceived that a large quantity of blood, probably amounting to one or two pints, may be forced into the heart in one huge gulp. It is under such circumstances that the pericardium prevents over-distension.

[2] Journal of Physiology, 1897.
[3] Dr. Leonard Hill: Proceedings of the Physiological Society, 1898.

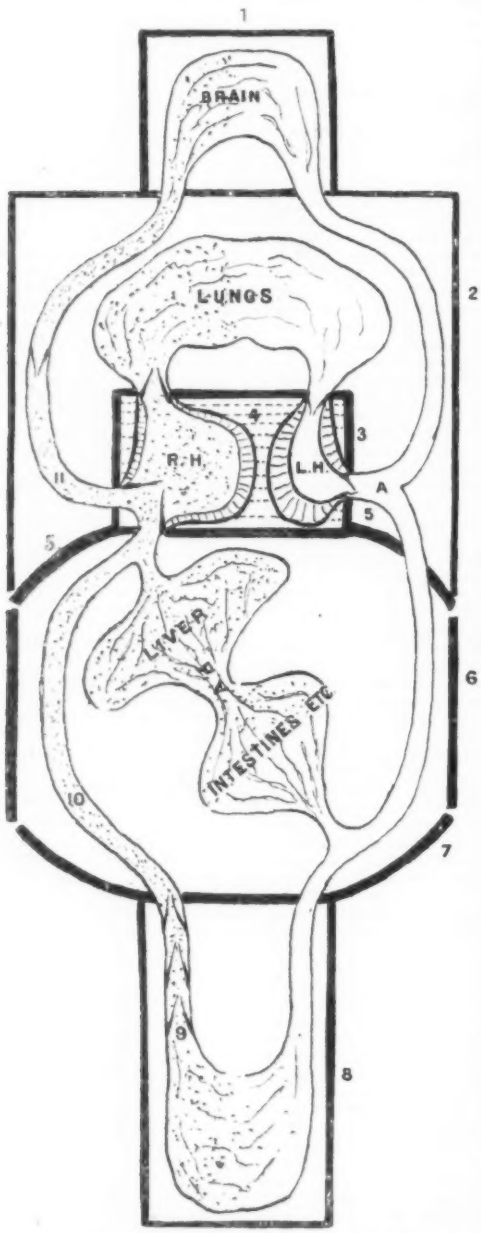
The pulmonary circulation during vigorous exercise is in a very large degree carried on by the respiratory movements. The pericardium supports the heart and prevents it dilating, whilst the abdominal muscles empty the venous sinuses of the abdomen through the right heart into the lungs. This is assisted by the coincident inspiration of the lungs which enlarges their capacity for both air and blood. During the ensuing expiration the lungs are squeezed empty like a sponge into the left ventricle, for the way to the right heart is barred by the pulmonary semilunar valves. The flow of blood through the liver is also brought about by respiratory movements. The descent of the diaphragm in inspiration squeezes the portal vein and empties the blood through the liver into the thorax. It seems probable that the great veins of the abdomen store a reserve of blood during rest and sleep, the muscular sphere containing these veins relaxing to a corresponding degree. Directly the person awakes or resumes active exercise the tonicity of the abdominal muscles is increased and this reserve of blood is driven into the general circulation and distends the heart and the arteries and veins supplying the active muscles.

We will now turn to certain points in the pathology of the pericardium and of the mechanism of venous circulation of which it is a part. When the pericardium becomes inflamed it becomes softened and we may infer that any sudden exertion or effort, especially a cough, will distend the heart with blood and cause it to press against the pericardium and so dilate it. I believe that a pericardium so dilated cannot recontract—that the heart within it will not in future receive support when it becomes engorged with blood, and that every effort will throw the heart out of gear, dilating its cavities and rendering its valves relatively incompetent and so producing cyanosis and breathlessness. I would therefore suggest that when the pericardium is inflamed the most absolute rest should be maintained not only until the inflammation has subsided, but until the inflammatory materials have organised into firm fibrous tissue. It appears to be of the greatest importance that pericarditis should be recognised early, for if the child be allowed to run about the pericardium may be irretrievably dilated. To return to the comparison of the pericardium and heart to the outer and inner case of a Dunlop tyre, if a hot day softens the outer case so that it bulges under the pressure of the air within we may patch it for a while, but it is irreparably damaged and dilated and goes progressively from bad to worse.

We will now consider one or two points about pericarditis with effusion. At first sight it appeared a most difficult problem how the effusion could exert sufficient pressure to dilate so tough a membrane as the pericardium without collapsing the thin auricles and preventing the ingress of venous blood. It was, of course, certain that venous blood must be introduced into the auricles at a higher pressure than that of the pericardial effusion or it could never enter at all. It was equally certain that this pressure must be high or it could not dilate so inextensile a membrane, but how this high venous pressure was obtained did not appear clear. Then the terrible dyspnœa of pericarditis with effusion occurred to me and I perceived that this was the violent working of the respiratory force-pump, driving a gulp of blood from the abdomen through the right heart into the lungs at each inspiration and forcing it once more through the left heart into the aorta at each painful expiration. Allowing no sleep by night or day it was one long struggle of the skeletal muscles to maintain the circulation through the heart in spite of the strangling pressure of the pericardial effusion. It seemed, moreover, probable that this terrible dyspnœa worked in a pernicious cycle and like the spreading œdema of the cerebral hemispheres tended to become progressively worse and worse. Each fluid wedge of blood driven through the compressed heart by the spasm of the abdominal muscles and the aspiration of the thorax acted across the incompressible effusion upon the softened pericardium, stretching it still more and making further room for fresh effusion. It then seemed clear that this type of dyspnœa was an imperative call for operative interference and the release of the effusion which was strangling the heart, for a pericardium so progressively dilated would probably not again contract so as to support the heart even were the effusion absorbed.

This matter seemed to be of such importance that I determined to investigate it experimentally, the research being carried out at the Brown Institution. A small rubber tube was ligatured into the pericardium of an animal under anæsthesia on Cohnheim's method but in such a way that the

thorax could be closed again and the animal resume normal respiration. Then warm oil was introduced into the pericardium, whilst a tracing of carotid and vena cava pressure was taken. The warm oil produced no effect whilst it filled the space in the pericardium which was not occupied by the heart, but directly it began to press upon the auricles the vena cava pressure rose and the arterial pressure fell and violent dyspnœa then followed, of the type which I had so hopelessly watched in several cases of pericarditis with effusion.



Schema of the circulation of the blood in man in the erect position. 1, Skull. 2, Thoracic wall. 3, Fibrous pericardium. 4, Pericardial effusion. 5, Diaphragm. 6, Oblique and transverse muscles. 7, Levator ani. 8, Muscles of the legs. 9, Femoral vein and valves. 10, Inferior vena cava. 11, Superior vena cava. R. H., Right heart. L. H., Left heart. A., Aorta. P. V., Portal vein.

Each gasping inspiration of the thorax was accompanied by violent contraction of the abdominal muscles and deep descent of the diaphragm, whilst expiration was accompanied by a sound which indicated obstruction of the larynx to the escape of air, thus raising the thoracic pressure and driving blood through the compressed left auricle and so into the aorta. That each respiration was successful in forcing a gulp of blood from the veins to the lungs and from these to the aorta was shown by the wide oscillations of the carotid blood-pressure with each respiration. Directly the oil was allowed to escape from the pericardium the dyspnœa ceased, the carotid pressure rose, and the vena cava pressure fell to its usual low ebb, showing how beneficial the release of the fluid would be to patients suffering from pericarditis with effusion. I would therefore urge that dyspnœa of the type which I have described is the indication in pericarditis with effusion that the auricles are being pressed upon and that the effusion must be released. Of course this should be done by the open method and not by blind stabbing with a trocar and cannula, for there appears to be the greatest difficulty in distinguishing pericarditis with effusion from a widely dilated heart in a dilated pericardium. I know of a case where a young girl dropped back dead whilst the aspirating needle was being passed without an anæsthetic. A large pericardial effusion had been diagnosed, but on a post-mortem examination 15 ounces of pure blood were found in the pericardium and a wound in the heart. My experiments would seem, however, to indicate a diagnostic sign between these two conditions, although this has not been confirmed clinically. If tricuspid regurgitation is indicated by marked systolic pulsation in the veins of the neck the condition is probably one of a dilated heart in a dilated pericardium and not pericarditis with effusion. If the effusion exerts sufficient pressure to cause dyspnœa of the type which I have referred to the heart will be compressed and the tricuspid valve will scarcely show relative incompetency. If the heart is so dilated as to simulate pericarditis with effusion the tricuspid valve must be widely patent during systole and the systolic pulse will be communicated to the veins. This brings me to another point. In animals relative incompetency of the tricuspid valve can only occur in a slight degree whilst the pericardium is intact. When the pericardium is removed and the heart is engorged with blood by pushing the chloroform or squeezing the abdomen the valves at once become incompetent and the systoles of the right ventricle appear as oscillations in the vena cava pressure. It would therefore appear to be a mistake to attribute relative incompetency of valves to stretching of their fibrous ring. It would seem to be due to dilatation of the pericardium.

We will now turn to some of the results which follow from the failure of the skeletal muscles to efficiently raise the blood from the legs and abdomen to the heart. When the muscles of the legs fail to act vigorously the venous blood stagnates and produces œdema and sweating of the feet and in some cases varicose veins. It seems probable that loss of tone in the muscles of the calf is the cause of the association of varicose veins and sweating of the feet with flat foot. It is even more probable that varicose veins are produced by long-continued standing because the muscles do not periodically relax, allowing the deep veins to fill with blood and then pump it into the abdomen by a contraction. Pott's fracture, however, provides us with the best example of failure of the muscular venous pump in the leg. This fracture always involves the ankle-joint and is frequently followed by fibrous ankylosis. The muscles of the calf only serve to move the ankle-joint, so that when that joint is immoveably fixed they cease to contract at regular intervals. As a result venous stagnation follows and the most obstinate œdema of the foot and leg, frequently going on to chronic ulcers. Ankylosis of the knee does not produce the same result because the muscles of the thigh act also upon the hip-joint and continue to contract at intervals to move that joint. A similar œdema follows ankylosis of the wrist.

The moral to be drawn from the powerful vascular action of the skeletal muscles would appear to be that regular exercise to maintain the tone and power of the muscles is essential to the well-being of everyone but more especially to people with a low blood-pressure. The development of the muscles of the abdominal wall is of the greatest importance, for a flaccid abdominal wall produces a languid venous return and this again reacts upon the circulation of the brain and produces lassitude and depression. Especially will such general exercises as walking and cycling cause a rapid vascular flow all over the body and eliminate waste products

from the tissues. The production of syncope by the relaxation of the arterioles of the abdominal organs is a well-known phenomenon. The blood leaks through into the capacious portal vein and the ill-filled heart cannot supply the brain with blood. In fact, the man is bled into his abdominal veins. This could scarcely occur with a tonic and powerful abdominal wall, for a few deep breaths would rapidly return the venous blood to the heart. It is apparently in anticipation of such emotional relaxation that Marryat makes his privateersman and Kipling his soldier take a reef in their belts or tightly tie a handkerchief round their waists before going into action.

But there is the commoner instance of what may be called partial syncope seen in nervous or over-worked youths presenting themselves for examination. The diarrhœa and sickness point to abdominal congestion, and the mental confusion and loss of memory point to cerebral anæmia, whilst the thumping pulse and breathlessness indicate an ill-filled heart. Sometimes this condition is associated with albuminuria and forms one of the less recognised causes of the albuminuria of adolescence. The treatment of such people would appear to be obvious. There should be regular exercises, especially of the abdominal wall, and where such an ordeal as an examination has to be undergone an abdominal belt should be worn sufficiently tight to constrict the abdomen. I am convinced that neurotic and emotional people, who have as a rule a low blood-pressure would escape from a large part of their depression and lassitude were they daily to perform calisthenic exercises and develop the tone of their abdominal wall. In this connexion it is interesting to note the results obtained by Dr. Craig at Bethlem Hospital in cases of mania and of melancholy. He observed their blood-pressures, using for the purpose the sphygmometer invented by Dr. Leonard Hill and myself. In cases of mania associated with excessive restlessness he found the blood-pressure to be low, whilst in cases of melancholy with the sufferer sitting motionless in a stupor of grief he found the blood-pressure to be high. Further, he showed that in cases of mania the uniform pressure of a bath raised the blood-pressure and diminished the restlessness.

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NOTES ON A CASE OF UNILATERAL OPTIC NEURITIS.

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THE patient, a female, aged 21 years, consulted me on May 13th, 1897. A week previously she had severe and continuous neuralgia on the right side of the head. The sight of the right eye became dim and was lost in two days; she was menstruating at the time. Her previous history had been generally good, but menstruation was very irregular, two or three months often being missed. She was in the habit of taking a large amount of outdoor exercise. Three months ago she had a blow on the head severe enough to leave a black eye; six weeks ago she had measles badly. Her memory was extremely bad, but the patient said that it had always been the same. With regard to her family history her mother died three years ago from cancer of the larynx, otherwise there was no history of tumour, tubercle, syphilis, or other hereditary disease. The patient was above the average height, slight, and fairly muscular; her face was pale and looked pinched as if she had been suffering a good deal. She complained of pains in the head which shifted about but were mostly in the right temporal region where there was tenderness on pressure. The sight of the right eye was doubtful perception of light; of the left $\frac{6}{9}$ J. 1 at one foot. The pupil reflex of the right eye was not quite abolished. Ophthalmoscopic examination showed in the right eye intense congestion of the retinal veins. The optic disc was red and swollen and the outline was blurred. There were no hæmorrhages and no opaque exudation. The left eye showed no change whatever. I found three very bad teeth, two molars and one bicuspid, in the right upper jaw. Two of the teeth were extracted on the following day, the third two days later. Mr. Longhurst reported that there were abscesses at the roots of the first two, the third was carious but there was no abscess at its root. 15 grains of bromide of potassium were ordered to be taken at night. On May 14th I saw the patient with Sir William Broadbent who found no evidence of disease in the chest or abdomen and agreed with me as to the probability of the teeth being the cause of the trouble. On the 15th she suffered much during the night from headache. Oleate of mercury and extract of belladonna were ordered to be rubbed into the head wherever painful. On the 16th the right eye had lost all perception of light; there was no pupil reflex and the swelling of the disc had increased. 10 grains of iodide of potassium and solution of perchloride of mercury were ordered. On the 17th I saw the patient in consultation with Mr. Victor Horsley who thought there might possibly be some taint of influenza in the case and recommended salicine. The iodide and perchloride made the patient sick and were discontinued. Mercurial inunction was commenced. The knee-jerks and other reflexes were normal. On the 20th strabismus was noticed. I did not see it myself, but was told that it was inward and affected both eyes. On the 22nd retinal hæmorrhages had appeared. On the 24th she was seen again with Mr. Horsley. We discussed the question of trephining but agreed to let it stand over for the time being; we ordered the patient to bed—up to this time she had been going about when she felt inclined. Some swelling of the eyelids was noticed. The urine was examined and found to be normal. The temperature was 100·4° F. On the 25th the swelling of the eyelids had increased. There was much pain in the eye, side of the head, and face, and there was tenderness on pressure on the eyeball and over the points of exit of the fifth nerve. An abscess forming in the orbit or antrum (?). Three leeches were applied to the temple. On the 29th the swelling of the lids had subsided, there was very little pain, and no tenderness on pressure. On June 2nd the menstrual period was due. The swelling of the disc was greater and the retinal hæmorrhages were much more numerous and larger; there were large clots scattered all about. On the 8th the patient had continued in much the same condition, having headache at times; the pain shifted about and did not remain fixed in any particular part of the head. Ophthalmoscopic signs were unchanged; she said she thought that her left eye was going wrong; up to this time vision was $\frac{6}{9}$ J. 1, field normal. On the 10th there was decided narrowing of the outer part of the field of the left eye. Ergotin was ordered. On the 11th Mr. Nettleship and Mr. Horsley saw the patient with me. In the left eye the outer half of the field for form was entirely gone, but light perception was still good; movement of the eye upwards was much impaired and outwards to a less extent. The ophthalmoscopic signs in the right eye were the same; the swelling of the disc amounted to 7 D. There was nothing abnormal in the left eye. The knee-jerks were not affected but there was slight ankle clonus. She was ordered iodide of potassium in 10-grain doses and to continue the mercurial inunction. Mr. Nettleship thought very badly of the case and was of opinion that the symptoms were due to a tumour probably growing backwards from near the right optic foramen. On this date the temperature which, with the exception of having been 100·4° on May 24th and 97° on the mornings of May 25th and 26th, had kept fairly level—the extremes being 97·4° on May 31st and 99·8° on June 7th—began to jump up and down in an unusual fashion between 101·6° on June 26th and 98° on July 11th. On the 15th movements of the eyeball were much improved; the condition of the retina and hæmianopia were unchanged. The patient was depressed and felt weak and languid. She was ordered pilula aloes c. myrrha. On the 24th movement of the eyeball had improved and the swelling of the optic disc was less. On the 28th the patient was flushed and excited. The left eye did not see so well but she could make out J. 1 with difficulty; she could not see the light of a match in the outer half of the field. On the 29th the mercurial inunction was finally stopped. On the 30th menstruation was due. The patient was much worse; she had a good deal of headache shifting about to all parts of the head. She said that everything looked dark; she could make out J. 16 badly; the pupil reflex was abolished. On July 1st I met Mr. Nettleship and Mr. Horsley in consultation. Sir John Williams also examined the patient and found nothing wrong. The patient was drowsy and evidently very ill. Iodide of potassium and iron were ordered. The urine examined was found to be normal. On the 3rd the left eye had lost perception of light but the ophthalmoscope showed no change. The blood examined was found to be normal. On the 5th Dr. Goodhart saw the patient and was of opinion

that the case was one of tumour high up in the brain. Liquor arsenicalis was given in addition to iron and iodide; permanganate of potash was given in pills and three leeches were applied to the temple. On the 12th the patient had been getting more and more drowsy during the last few days; the pupils were smaller and reacted slightly to light; there was doubtful perception of light. She had been sick twice (cerebral vomiting?); the tongue protruded to the left; there was weakness of the left arm; the knee-jerks, which had been absent since July 1st, returned to some extent. The symptoms seemed to point to formation of abscess on the right side of the brain. On the 13th there was paralysis of the left arm and leg. Drowsiness had increased to coma, from which the patient could be roused with difficulty. We decided to open the skull, which was done by Mr. Horsley. The dura mater bulged into the wound and was opened and the brain was explored in all directions. A very large quantity of fluid escaped but no pus. On the 14th the patient had passed a restless night; she was never quite conscious, now sleeping quietly. The pulse was good, the respirations were quiet, and the temperature was 99°. She had much difficulty in swallowing. On the 15th she was conscious; she could use the left hand and moved the leg occasionally. The temperature was 98° and the pulse was fairly good. On the 16th the pupils were moderately contracted and the reflex was doubtful. The patient was getting weaker. On the 18th she was drowsy, wandered occasionally, and took fluid nourishment freely. The swelling of the right optic disc was much less, most of the hæmorrhages having disappeared. The left fundus appeared to be quite normal. The temperature was 99° and the pulse was good. On the 20th there was more wandering, the patient became comatose in the afternoon and the breathing became stertorous but got natural again on lowering the head. The eyes deviated strongly to the left. On the 25th the patient had continued in much the same condition during the last four days, but it had been necessary to use a catheter two or three times. The day previously (the 24th) she became more comatose, breathing badly; the pupils were noticed to be contracted and the eyes which had hitherto been kept closed were widely open and moved up and down. Much mucus collected in the throat, she was quite unable to swallow, and appeared to understand vaguely what was said to her. The pulse was 104 and the temperature, which had been steadily rising for the last two days, was 100·2°. Swelling of the right optic disc had almost subsided, the disc was white and opaque, and the retinal hæmorrhages had disappeared; the left optic disc was slightly congested and the retinal veins were rather full. No change had hitherto been noticed in it; it was perfectly normal on the 18th. On the 26th the patient was quite unconscious, the face was cyanotic, the eyes were staring widely open and directed to the right, breathing was diaphragmatic, the chest walls and nostrils drawing in at each inspiration, and the chest was full of mucus. The pulse was 140 and the temperature had gone up to 104·2°. On the 27th the temperature had gone down to 100°, the pulse was uncountable, and the respirations were 65. On the 28th the temperature had run up to 105·4°, the pulse was thready and uncountable, and the respirations were 65. Cyanosis was much increased. The patient died at 11.30 A.M. The operation wound gave no trouble and remained entirely aseptic. The upper part healed by primary union and the lower extremity which was left open but afterwards closed glazed over and at the time of death was covered by a dry scab.

Remarks.—There are some points of interest in this case. At the outset there was a difficulty in diagnosis. The history and symptoms pointed to intracranial disease and when I saw the condition of the right optic disc I at once came to the conclusion that I had to do with a case of cerebral tumour. I expected to find neuritis in the left eye notwithstanding that its sight was perfect; when I found a perfectly normal condition of things I began to think of a local cause. On going back to the history there were measles and injury, but neither of these, to my mind, seemed to account for the very marked one-sided eye affection. I then looked for local trouble and found the carious teeth; I considered that they were the cause of the evil either by reflex irritation or by setting up periostitis which extended to the orbit and optic foramen and thence to the interior of the skull. The diagnosis I made and adhered to to the end was that the whole of the trouble was due to the inflammation and that no tumour existed.

Another point in the case was the influence which menstruation had upon the progress of the case. The patient was menstruating when she was first taken ill; she never menstruated again, but at the next period many fresh retinal hæmorrhages appeared in the right eye and she lost the outer half of the field of vision in the left eye; at the third period all perception of light was lost in the left eye; and at the fourth the patient died.

Still another point was the way in which the left eye, even though it lost perception of light, remained without any abnormal ophthalmoscopic signs up to near the end of the case—a period of about 10 weeks. Also the rapidity with which the swelling of the disc and retinal hæmorrhages in the right eye disappeared. Both were at their worst at the beginning of June and the disc was passing into atrophy and the hæmorrhages had all disappeared before the end of July.

Again, with regard to the nature of the case. As it progressed the symptoms appeared to be all in favour of inflammation within the skull; the temperature was that of inflammation and the rapidity with which the disease progressed also pointed in the same direction. In my experience the progress of cases of cerebral tumour is slow, the duration of the disease being months or years, not weeks, as in the case under consideration. A post-mortem examination was made by Mr. Bellingham Smith and Dr. John Fawcett and the following is their report.

Necropsy.—A post-mortem examination was made on July 29th, 1897. There was no bulging of any part of the brain. The dura mater was separated with difficulty over the lower part of the motor area on each side and also from the pia arachnoid at the base, especially in the interpeduncular space extending forward in front of the chiasma. The pia arachnoid showed the typical opaque appearance characteristic of basal meningitis, especially marked in the interpeduncular space and also in front of this. There was recent lymph on the surface. The frontal lobe was firmly adherent at the base of the longitudinal fissure, the adhesions extending forwards between the two for about one and a half inches. Scattered over the pia arachnoid were several minute glistening bodies which were thought to be tubercles. A portion of one of the Sylvian arteries with its smaller branches was therefore extracted but no tubercles were detected microscopically on these. Both optic nerves and the chiasma were very much swollen. The nerves in particular were extremely prominent and the swelling extended as far as the posterior margin of the orbit on each side, but on being traced into the orbital cavity itself were then seen to be of normal size. The portions of the optic nerve behind the orbit looked twice as large as a normal optic nerve. The brain substance itself was very soft and tore very readily. The lateral ventricles were somewhat dilated. No tuberculous focus was found. There was no evidence of any bone lesions or of inflammation of the ears. The nasal cavity was not examined. There was no thrombosis of the large vessels or of sinuses. Over the parts where the dura mater and pia arachnoid were adherent there was also opacity of the membranes with recent lymph. On microscopical examination of the vessels with portions of the meninges attached thrombosis of the small vessels was observed in all the sections examined, but there was little extra vascular inflammation in the membranes here and no tubercles were seen. The optic nerves showed extreme neuritis with total destruction of nerve fibres.

Brook-street, W.

LITERARY INTELLIGENCE.—The Rebman Publishing Company's new books include the following: "A Text-book of Diseases of the Eye, Ear, Nose, and Throat," edited by George E. de Schweinitz, M.D., and B. Alexander Randall, M.D., of Philadelphia, assisted by a large staff of collaborators; "A Text-book of Obstetrics," by Barton Cooke Hirst, M.D.; and a small work on "The Sanitation of British Troops in India," by Captain E. Carrick Freeman, R.A.M.C. The same firm will also shortly issue a "Text-book of Pathology," by Professor Stengel of Philadelphia; an entirely new "Pocket Medical Dictionary," edited by Dr. W. A. Newman-Dorland, also of Philadelphia; an "Atlas of External Diseases of the Eye," by Professor O. Haab (of Zürich), edited by G. E. de Schweinitz, M.D., being vol. vi. in their "Hand-Atlas" series; and Dr. J. P. Crozer-Griffith's manual on "The Care of the Baby."

A CRITICISM OF THE MORE COMMONLY EMPLOYED TESTS FOR ALBUMIN IN URINE.

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THE detection of albumin in urine is of such great clinical importance that a short critical survey of some of the more commonly employed tests may not be without value. The following remarks are based on an experience gained during a systematic examination of a large number of urines by a series of 16 selected tests—viz., heat, heat and acetic acid, heat and nitric acid, cold nitric acid (Heller's test), potassium ferro-cyanide and acetic acid, sodium chloride solution and acetic acid, Roberts's brine test, salicylsulphonic acid, trichloracetic acid, picric acid, Esbach's solution, Millard's reagent, Tanret's reagent, Spiegler's reagent, acetic acid in the cold, and acetic acid and the urine diluted with two or three volumes of distilled water—the qualitative examination being followed in most cases by a quantitative estimation when albumin was found to be present. This list by no means exhausts the formidable array of tests which have at various times been suggested, but it embraces those in everyday use and a few which have been recommended for their delicacy or for some other special reason.

Highly albuminous urines, as a rule, present few difficulties, but when only "traces" are present great care is necessary and an examination by several tests is needed before it can be safely assumed that the reaction obtained is due to albumin and to nothing else. This difficulty arises from the highly complex composition of urine and the fact that the majority of the reagents employed react with other substances, normal or pathological, which may occur in it.

For a long time it has been recognised that a reaction was given by many of the more delicate tests with normal urines obtained from persons in sound health and quite free from all suspicion of kidney or other mischief which might give rise to albumin in the urine. This was said to be due to "mucus." The researches of Posner, Spiegler, and others[1] have shown that all urines contain small quantities of proteid material, derived in all probability from the cells lining the urinary tract, and in 1895 H. A. K. Mörner[2] demonstrated that the urinary "mucus," although possessing the physical and some of the chemical characters of true mucus, was not identical with that body, but was formed by the combination of albumin with chondro-sulphuric acid and nucleic acid (and in certain pathological conditions with taurocholic acid) in varying proportions. These compounds are now generally referred to as nucleo-albumin or nucleo-proteid. Under certain circumstances even in health, and more especially in inflammatory conditions of the urinary tract, the nucleo-proteids may be present in sufficient amount to react to Heller's cold nitric acid test. They may be distinguished from albumin by the fact that they readily give a precipitate with vegetable acids—e.g., acetic or citric—which is increased by removing the salts of the urine by dialysis or by diminishing their relative proportion by the addition of two or three volumes of distilled water. They are also precipitated by dilute mineral acids, but are soluble in dilute alkalies or concentrated mineral acids. All the tests for albumin in urine therefore which require preliminary acidification, especially with vegetable acids, are liable to cause precipitation of the nucleo-proteids, but the precipitation may be to a great extent prevented by the presence of considerable amounts of salts in solution. True mucus does occur in urine but in very minute traces, and it is only by treating large quantities of urine that its presence can be demonstrated.[3] The reactions of true mucus with acids are similar to those described for nucleo-proteids. Mucus can only be distinguished from nucleo-proteids by a long series of chemical processes far too formidable and tedious to be attempted in clinical work, nor would any serviceable end be attained by so separating them. The nubecula or "mucus cloud" which is often deposited when urine, even the clearest, is allowed to stand may consist of nucleo-proteids, but frequently it is only composed of intact, but maybe distorted, epithelial cells.[4]

The "native" proteids, serum-albumin and serum-globulin (paraglobulin), react to all the tests mentioned in the above list. They are not usually differentiated, nor is it necessary to do so, for at present we cannot attach any special pathological significance to a preponderance, an absence, or the presence of one or the other. They are generally referred to together under the name "albumin." Albumoses (proteoses, propeptone, or Meissner's peptone) are said to be found under special conditions which may make their detection of some assistance in diagnosis—e.g., in suppurative processes with retention and breaking down of pus, acute infectious diseases, osteomalacia, and in some cases of myxœdema, &c.[5] By the behaviour of the urine with heat and acetic acid or nitric acid, with cold nitric acid, with potassium ferro-cyanide and acetic acid, with brine and acetic acid, and with salicylsulphonic acid or trichloracetic acid the presence of albumoses may be determined when they are present alone or with only small amounts of albumin, for the precipitate produced disappears on boiling to reappear on cooling. When considerable amounts of albumin occur together with the albumoses it is necessary to remove the former by boiling and filtering while the solution is hot before the characteristic behaviour of the albumose precipitate can be seen. Care must be taken in employing the potassium ferro-cyanide and acetic acid test for the detection of albumoses as the mixture itself is liable to be decomposed by boiling, with the formation of a white precipitate which, however, quickly turns blue on exposure to the air. The biuret test cannot be employed to detect albumoses in urine—at least directly—for uric acid also gives the biuret reaction. True peptone (in Kühne's sense) does not occur in the urine[6] and the cases of so-called peptonuria are really cases of albumosuria, deutero-albumose (Brücke's peptone), which is very closely allied to true peptone, being most commonly the source of error.

It is outside the scope of this article to describe the methods of performing the various tests discussed, and at the end of the paper will be found a list of references to various sources from which the information may be obtained.

The heat test, as the oldest and probably the most universally employed, is considered first. It is a very delicate test when the conditions are favourable, but the delicacy depends largely upon the reaction of the urine. In alkaline urines even large amounts of albumin may be overlooked, probably from the formation of soluble potassium and magnesium compounds, and when patients are taking alkalies it is especially important to remember this fact. An excess of acid may also interfere with the success of the test. All urines which give a precipitate on heating do not contain albumin; for in feebly alkaline or neutral urines, as is well known, heat produces a precipitate of earthy phosphates which is similar in appearance to the albumin precipitate but which differs from it in being instantly soluble in a small quantity of acid, either organic or mineral. In the urine of vegetarians, and occasionally in that of others, a similar precipitate of carbonates occurs. This precipitate is also soluble in acids, but the addition of the acid is followed by an evolution of carbon dioxide gas. A turbidity in the cold urine may be due either to urates which readily dissolve on heating, or to the presence of putrefactive organisms when it is unaffected by heat. In order to render the urine clear in the latter case, so that a slight turbidity due to albumin may not be overlooked, it is necessary to filter before applying the test. But frequently mere filtration through absorbent paper is not sufficient, and then

[1] C. Posner: Berliner Klinische Wochenschrift, 1885; Virchow's Archiv, 1886; du Bois' Archiv, 1887. E. Spiegler: Wiener Medicinische Blätter, 1894. P. Plósz: Orvosi Hetilap, 1890; Jahresbericht für Thierchemie, 1890. Von Noorden: Berliner Klinische Wochenschrift, 1890. Duden: Centralblatt für die Medicinischen Wissenschaften, 1887. W. Leube: Zeitschrift für Klinische Medicin, 13, 1.

[2] Skandinavien'Archiv, 1895.

[3] Malfatti: Wiener Klinische Wochenschrift, 1891. Mörner: Skandinavien Archiv für Physiologie, 1895.

[4] Schäfer: Text-book of Physiology, vol. i., p. 603.

[5] Maixner: Zeitschrift für Klinische Medicin, 1884. Von Jaksch: Ibid., 1883. Pacanowski: Ibid., 1885. Bence Jones: Transactions of the Royal Society, 1848. Fitz: American Journal of the Medical Sciences, July, 1898.

[6] L. Devoto: Zeitschrift für Physiologie, 1891. J. A. Shulter; Jahresbericht für Thierchemie, 1886, 1888. K. Lenz: Centralblatt fü die Medicinischen Wissenschaften, 1892. L. Sior: Jahresbericht für Kinderheilkunde, Band xxxvii., p. 252. E. Stadelmann: Untersuchungen über die Peptonurie, Wiesbaden, 1894. H. Thomson: Deutsche Medicinische Wochenschrift, 1889.

the urine may be shaken with calcined magnesia or kieselguhr, or a few drops of caustic soda may be added and after standing for some time it may be filtered again. A slight turbidity in the urine after heating due to albumin readily recognisable in daylight may easily pass unnoticed artificial light. Heat alone is untrustworthy as a test for albumin and it is better to employ heat in conjunction with an acid. Both acetic acid and nitric acid are employed for he purpose.

In applying the *heat and acetic acid test* it is best to first take the reaction of the urine (if it be alkaline sufficient acid is added to give a faintly acid reaction), then, after boiling, to pour in a little more of the acetic acid and if no precipitate has appeared to boil again. By heat alone the nucleo-proteids are not precipitated but the addition of acetic acid is very liable to cause them to separate out, especially in dilute urines, and the cloudiness produced is indistinguishable from that caused by small amounts of albumin.

Heat and nitric acid.—Nitric acid, although it does not so readily precipitate the nucleo-proteids, forms with albumin a coagulum which is soluble on heating, so that if nitric acid is added and the urine is then boiled, although large amounts of albumin may be present, no precipitate is produced. If, however, the urine be brought to the boiling point and, whether a precipitate has formed or not, nitric acid be added drop by drop, the mixture being shaken between each addition, very small amounts of proteid are shown whatever the original reaction of the urine may have been. Not more nitric acid than about one-third of the volume of the urine under examination must be added, nor must the urine be heated again after the addition of the acid. In concentrated urines nitric acid may cause a powdery precipitate of uric acid or its salts. This may be distinguished from albumin by filtering off the precipitate and testing it by the biuret reaction, or if the urine be diluted with an equal volume of water and the test be repeated any precipitate from this cause will be avoided. After the internal or external use of turpentine, benzoin, cubebs, storax, santal, balsam of copaiba, peru, tolu, &c., resin acids which are precipitated by nitric acid may occur in the urine. This precipitate differs from that due to albumin in being soluble in alcohol (one or two volumes of methylated spirit), but as alcohol combines with nitric acid with explosive violence when warm it is necessary to cool the urine before adding the spirit. Nitric acid gives with biliverdin in strongly bilious urines, a precipitate soluble in alcohol. In practice the heat test, and its modification with acetic and nitric acid, has the advantage of being simple and easy of application. It is very delicate, so delicate in fact that non-pathological amounts of albumin are readily shown, but it is open to numerous objections which must be borne in mind in applying it. This is especially true of the heat and nitric acid method.

Cold nitric acid (Heller's test) is by no means as delicate a test as are the heat and acetic acid and the heat and nitric acid tests, but it will show one in 12,000 parts of albumin at once and one in 30,000 after standing for from two to three minutes. For all practical purposes the latter may be taken as the least amount of albumin of importance clinically.[7] The success of the test depends very largely on the way in which it is performed. The urine must be gently poured on to the nitric acid and not the acid on to the urine, for it is necessary that the albumin coagulum should be formed in presence of an excess of strong nitric acid in which it is insoluble, and this can only be attained by the first method. In addition to the ring at the surface of contact characteristic of albumin, and sometimes when this fails to appear, a second feebler ring may be seen about from 0·5 to 1·0 centimetre above the junction in the urine. This is generally due to the presence of nucleo-proteids, and on repeating the test with a sample of urine diluted with two or three volumes of water the albumin ring is found to be diminished, while the secondary ring, if it is caused by nucleo-proteids, is either unchanged or even increased in intensity. Occasionally a diffuse haze forms instead of a definite ring, and this, too, when it arises from nucleo-proteid is affected in a similar way by dilution with water. After standing a short time the urine becomes more generally cloudy and the nucleo-proteid ring falls to the plane of contact. In concentrated urines a secondary ring due to uric acid may form some distance above the junction, but it is soluble on gently heating and does not form when the urine has been previously diluted with water. A precipitate of nitrate of urea, often in large crystals, may occur after some time with highly concentrated urine, but it is obviously crystalline in nature and is prevented by dilution. Resin acids are also precipitated, but the precipitate generally appears as a uniform cloudiness less well defined than that due to albumin and is soluble in alcohol. By oxidation of the urinary pigments, more markedly in highly coloured urines, a coloured ring is often seen at the plane of contact and in bilious urines the play of colours characteristic of Gmelin's test for bile pigments is observed. The urine of patients on alkaline iodides gives a dense brown ring of liberated iodine, but on adding a few cubic centimetres of chloroform and inverting the tube several times the iodine dissolves and imparts to the chloroform a beautiful violet tinge. All forms of albumin, acid and alkaline, as well as albumoses, are precipitated, but peptones and the vegetable alkaloids are unaffected. A great disadvantage of the test is the corrosive nature of the reagent employed and the consequent difficulty of transport.

The potassium ferro-cyanide and acetic acid test is largely used in America and on the continent. It is easy and simple of application and is more delicate than Heller's test, showing one in 50,000 parts of albumin. It is best performed as a ring test. The urine should be carefully run on to a mixture of 20 or 30 drops of acetic acid with two or three times that amount of saturated potassium ferro-cyanide solution. In the presence of albumin a white ring quickly forms at the junction. When carried out in this manner the precipitation of nucleo-proteids is to a great extent avoided, for the acetic acid only comes in contact with the urine in the presence of an excess of potassium ferro-cyanide. Should the urine, as is sometimes advised, be first mixed with the acetic acid and then the potassium ferro-cyanide solution be added the nucleo-proteids are not held in solution, but they appear as a white cloud indistinguishable from albumin. With small amounts of albumin the ring may take some minutes to form. Concentrated urines may have to be diluted with water, as the precipitate is soluble in strongly acid solutions. Albumoses are precipitated, but are soluble in excess of acetic acid and disappear on heating to reappear on cooling. The liability of the potassium ferro-cyanide mixture itself even when dilute to undergo decomposition on heating must be borne in mind. Phosphates, urates, alkaloids, and peptones are not precipitated, but resin acids give a precipitate which is soluble in alcohol and uric acid may slowly separate out on standing.

Roberts's acidulated brine test (saturated sodium chloride solution with 5 per cent. hydrochloric acid) is about as delicate as Heller's test and has the advantage of not darkening the urine and of not causing the precipitation of uric acid. It gives a well-marked ring with albumin and albumoses. Resin acids, when present, come down as a general haze in the urine, soluble in alcohol. The test was introduced with the object of avoiding the precipitation of "mucus"[8] but is only partly successful.

The salt and acetic acid test is similar in principle to the last-mentioned test but here acetic acid is substituted for hydrochloric acid and a large excess of saturated sodium chloride solution—at least one-sixth, and better one-half, the volume of the urine—employed. The salt solution is first added to the urine and after they have been thoroughly mixed the necessary amount of acetic acid is poured in; by this means the precipitation of the nucleo-proteids is prevented. Even in the cold an opacity is seen if a large amount of albumin is present but generally heat is required before any effect is produced. The great advantage of the test is that while it avoids the nucleo-proteid reaction probably better than any other the materials for performing it are always at hand. Salt can be had in any household and a saturated solution is readily made. Vinegar (which contains about 6 per cent. of acetic acid) is also readily obtained, and the mixture may be heated in an ordinary metal spoon over a spirit lamp or candle. It is not quite so delicate as the simple heat and acetic acid method, but it shows smaller amounts of albumin than Heller's test. All forms of albumin are precipitated, but the albumose precipitate disappears on

[7] S. West: Lettsomian Lectures, 1892.

[8] William Roberts: THE LANCET, Oct. 14th, 1882; Virchow-Hirsch's Jahresbericht, 1882; Zeitschrift für Analytische Chemie, Band xxii., p. 628; Chemisches Centralblatt, 1883.

heating to reappear on cooling. In a mixture of albumin and albumoses if after boiling for a short time the hot fluid is at once filtered through a warm filter the clear filtrate will as it cools become turbid from the separation of the albumoses. Resin acids and uric acid are precipitated, the latter, however, only in concentrated urines and after standing.

The three last-mentioned tests may now be considered together, for all three, while reacting with albumin and albumoses, more or less successfully avoid the precipitation of nucleo-proteids. In my experience, although the potassium ferro-cyanide tests and Roberts's reagent do not readily give the "mucus" reaction, it is not altogether avoided, especially when large amounts are present, but by employing equal volumes of urine and saturated salt solution, with a few drops of acetic acid added as described above, I have failed to get any precipitate in urines which by other means were shown to be rich in nucleo-proteids. The only disadvantage of the salt and acetic acid test is that, as a rule, heating is necessary to show the albumin, and it then appears as a diffuse precipitate which it is often somewhat difficult to recognise, especially in artificial light. The potassium ferro-cyanide and Roberts's test on the other hand give a white ring which is readily seen, even when very faint, by contrast with the clear fluid above and below it.

Salicylsulphonic acid is a most useful reagent for detecting albumin in urine and one which can be highly recommended for general use. Although it is not quite as delicate as the heat and acetic acid test, it shows smaller amounts of albumin than does Heller's test very readily. By standing one or two minutes very small amounts of albumin indeed are shown and it is said then to be more delicate than picric acid or Tanret's reagent. It precipitates all forms of albumin, the precipitate becoming flocculent on heating. Albumoses are also precipitated, but the precipitate disappears on heating and reappears on cooling. Peptones are not precipitated unless the fluid is saturated with ammonium sulphate. If the urine is alkaline a little more salicylsulphonic acid is needed than in an acid urine before the albumin precipitate is obtained. Phosphates, urates, bile, alkaloids, and drugs do not give a reaction. The statement, however, which was made when it was first introduced as a test for albumin[9] that normal urine did not give a precipitate is not quite correct, for with many normal urines it gives a faint haze due to nucleo-proteids. With this exception any precipitate given in urine by salicylsulphonic acid is due to albumin or albumoses and to these alone.

Trichloracetic acid has been in use considerably longer than salicylsulphonic acid, but has not met with much favour in clinical work. It does not show such small amounts of albumin as salicylsulphonic acid and it has the disadvantage of precipitating uric acid from urines rich in that substance as a diffuse, often crystalline, precipitate. This may easily be mistaken for albumin, but it readily dissolves on heating and may be prevented by diluting the urine with water. Nucleo-proteids also give an opalescence. Albumoses are not precipitated, or only incompletely, and any precipitate due to these disappears when the fluid is heated but reappears as it cools.

Picric acid either alone (Johnson), or in combination with hydrochloric acid (Hager), or acetic or citric acids (Esbach), has been extensively used and highly recommended as a very delicate test for albumin in urine. It is by the use of this reagent that most of the astounding results as to the high percentage of cases of so-called physiological albuminuria have been obtained. My experience with picric acid has led me to distrust it altogether and I place little or no reliance upon its indications unless they are confirmed by other tests. Undoubtedly picric acid gives a readily recognisable precipitate with very minute traces of albumin in watery solutions. With urine, however, the conditions are very different—uric acid, creatinin, nucleo-proteids, and mucus in normal urine, as well as alkaloids, potassium salts, and albumoses in abnormal states, are all precipitated by picric acid and may simulate or mask the albumin reaction. It has been contended that the precipitates given by albumoses, alkaloids, and urates disappear on heating,[10] but the disappearance may be concealed by a well-marked flocculent precipitate which is produced by the action of heat on a mixture of picric acid and urine alone. The nucleo-proteid precipitate is unaffected by heat. It is also a fact of some little importance, but one that is not generally remembered in performing the picric acid test, that the albumin precipitate is soluble in excess of albuminous urine, so that it is necessary to add an excess of picric acid. The conflicting results often obtained by different observers, or by the same observer at different times, with the same urine may probably be in part explained in this way. For these reasons picric acid cannot be recommended as a routine test in clinical work, and any results obtained by its aid, unless other and more trustworthy tests have also been employed, must be accepted with considerable reserve. Its only advantages are that it is non-corrosive and that in the solid form it is easily carried about. It has also been suggested as a test for sugar in suspected cases of diabetes.

Phenol in various combinations has from time to time been used in detecting albumin. I have only had experience of one—

Millard's reagent (phenol, acetic acid, and caustic potash). By means of this reagent one in 200,000 parts of albumin is said to be shown, so that it is extremely delicate. It is a corrosive fluid which is awkward to work with or store. Albumoses, nucleo-proteids, alkaloids, and resin acids, in addition to albumin are precipitated. The precipitates due to albumoses and alkaloids are soluble on heating, and that caused by resin acids dissolves in alcohol.

The two next tests—Tanret's and Spiegler's reagents—are also very delicate, and it is by the use of his reagent that Spiegler[11] has shown the presence of small traces of proteids in normal urine. Tanret's reagent (potassium, mercuric iodide, and acetic acid) responds to all forms of albumin, as well as to albumoses, nucleo-proteids, peptone, alkaloids, and resin acids. The albumin precipitate is soluble in excess of albuminous urine, but not in excess of the reagent. Spiegler's reagent (corrosive sublimate, alcohol, and cane sugar or glycerine) precipitates albumin, nucleo-proteids, and albumoses, but not peptones. With very dilute urines the specific gravity may need to be raised by the addition of a little salt solution before the albumin reaction is given. It is said to show one part of albumin in 350,000 parts of urine and is the most delicate of all the tests. Both of these reagents react so readily with very minute traces of albumin that they are of little value in the routine examination of urine for diagnostic purposes and they also have the disadvantage, like most very delicate tests, of giving precipitate with non-albuminous substances. They were only included in the list for the sake of comparing their results with those given by other tests. I have found that Spiegler's reagent often gives a reaction when all other tests fail. Tanret's solution shows a precipitate less frequently than Spiegler's reagent, but more often than most tests. Salicylsulphonic acid, however, when allowed to stand a few minutes, gives a faint haze sometimes when with Tanret's solution no effect is produced. Picric acid gives such contradictory results that it is difficult to compare it, but I have never found it give an albumin precipitate when salicylsulphonic acid, on standing, has failed to show the presence of albumin or nucleo-proteid.

Acetic acid alone when added to many urines produces an opalescence which varies greatly in intensity. It is best seen by carefully filtering the urine to get it as clear as possible and then comparing the treated specimen with another sample, to which acetic acid has not been added, against a black background. This opalescence may be due to albumin, but it is also produced by nucleo-proteids. To distinguish them a fresh sample of the filtered urine is taken and two or three volumes of distilled water are mixed with it, acetic acid is then added, and the resulting precipitate is compared with that in the undiluted specimen. A precipitate due to nucleo-proteids will be found to have increased in intensity, but if due to albumin it will either have diminished or have remained unchanged. In order to further distinguish between the two a third specimen is rendered neutral or very faintly acid, boiled, cooled, and filtered. The clear filtrate is diluted and treated with acetic acid as before, but now any precipitate is due to nucleo-proteids alone, for the congulable proteids have been removed in the process of the boiling and filtering. After standing several hours the nucleo-proteid precipitate may be collected on a filter, washed with distilled water, and redissolved in

[9] MacWilliams: Brit. Med. Jour., April 18th, 1891.

[10] G. Johnson: Brit. Med. Jour., May, 1883, and October, 1894; THE LANCET, Nov. 4th, 1882, and Dec. 20th, 1884; Zeitschrift für Analytische Chemie, Band xxiii.; Virchow-Hirsch's Jahresbericht, 1882 1883, 1884.

[11] Wiener Medicinische Blätter, Band xxxviii., 1894.

dilute ammonia or other alkali. This solution should give typical nucleo-proteid reaction with cold nitric acid, a cloud with salicylsulphonic acid, but no reaction with heat alone or saturated salt solution and acetic acid. Nucleo-proteids in solution also give a white ring when poured gently on to a saturated solution of citric acid or a mixture of acetic acid and glycerine.

The advantages and disadvantages of the various tests having been considered in detail it now only remains to consider them collectively and to offer a few suggestions as to the best to employ in practice. From what has been said it will be seen that none are quite free from objection. Some are more delicate than others and show very minute traces of albumin, but all react with one or more substances other than albumin in such a way that mistakes are liable to be made unless the particular fallacies of the test employed are remembered and guarded against. As a general rule, the more delicate the test the more liable one is to make mistakes in this way. Nucleo-proteids are the most common and most constant source of error, and since at present we cannot attach any special pathological significance to their presence in small amounts in the urine it is important that they should be carefully distinguished. Large amounts indicate a catarrhal condition of the mucous membrane of the urinary tract, especially of the bladder, and it is possible that in the future even small quantities, in excess of the traces normally present, may be shown to be related to a similar condition of the uriniferous tubules of the kidney. Uric acid is liable to cause some confusion in those tests where strong acids are employed, or in very concentrated urines even with the weaker acids, but if the fact is borne in mind, and in doubtful cases the urine is suitably diluted, the difficulty disappears. Resin acids give a precipitate with several of the reagents and in considering them separately this has been mentioned, but they occur so rarely, however, that little difficulty is likely to arise from this cause. Albumoses and their distinction from albumin have been dwelt upon at some length both in the introduction and in describing the tests, so that nothing further need be said on this point.

Of all the tests so far introduced salicylsulphonic acid seems to be the most convenient and the freest from objection. It is cleanly, fairly cheap, and certain. It may be carried about either as a solid or as a saturated solution in a drop-bottle, and is applied at once to the urine direct, without heating or any special apparatus. By means of it all forms of albumin and most albumoses are precipitated at once, the latter being readily distinguished by their solubility on heating. It acts in acid and alkaline urines equally well, and does not precipitate phosphates, urates, uric acid, bile, alkaloids, or drugs. In delicacy it comes between Heller's test and the heat and acetic acid test. Its great delicacy may, however, be counted as an objection, for quantities of albumin too small to be of pathological importance may be shown, especially on standing. The most serious objection is the readiness with which nucleo-proteids are precipitated, and at present we have no means of directly distinguishing this precipitate from that caused by albumin. The best check on these two fallacies is obtained by the use of Heller's cold nitric acid test in doubtful cases. The secondary ring (or haze) given with nucleo-proteids by this test is readily recognisable, and by diluting the urine with water any doubt is set at rest. The inferior delicacy of Heller's test also guards one against giving undue importance to a mere trace of albumin. Employed alone, cold nitric acid may lead to serious errors in diagnosis, especially in inexperienced hands, but when used as a confirmatory test to salicylsulphonic acid such errors are easily avoided.

References for tests.—Heat, heat and acetic acid, heat and nitric acid, Heller's test, Roberts's brine test, salt and acetic acid, potassium ferrocyanide and acetic acid, and salicylsulphonic acid—Cammidge: St. Bartholomew's Hospital Journal, February, 1899. Trichloracetic acid, picric acid, Esbach's reagent, Millard's test, and Tanret's test—Purdy: "Urinanalysis and Urinary Diagnosis." Spiegler's reagent—Wiener Klinische Wochenschrift, i., 1892.

VACCINATION IN PENZANCE.—At the meeting of the Penzance Board of Guardians held on April 13th it was stated that £102 would be paid for vaccination fees in the western district of the union, as compared with £15 paid for the whole union in the corresponding quarter of last year. One of the members thought that the names of persons vaccinated by the public vaccinator should be published.

A SECOND CASE IN WHICH RECURRENT MAMMARY CANCER DISAPPEARED AFTER TREATMENT BY OÖPHORECTOMY AND THYROID EXTRACT.

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I PUBLISHED in THE LANCET of June 11th, 1898, a case in which recurrent mammary cancer had disappeared after oöphorectomy and the continued administration of thyroid extract. I have now to add to that report that the patient continues in good health (April, 1899), has no sign of recurrence, and has gained about 5 lb. in weight since that report was written. I have also to correct an error in the report. It was said that the tumour was not examined microscopically. It was examined and found to be indubitably cancer. I have now to report a second case in which similar treatment has been followed by a like result.

The patient had had three children and two miscarriages, the last pregnancy being 14 years ago. She first noticed a lump in her right breast towards the end of 1894, she being then aged 45 years. In May, 1895, she went to the Middlesex Hospital, and on June 1st Mr. George Lawson removed the right breast with the fascia covering the pectoral muscle and four enlarged axillary glands. The growth on microscopical examination proved to be carcinoma. On Oct. 21st of the same year she was re-admitted with three nodules situated just beneath the scar and just external to the anterior axillary line and two others just above the centre of the scar. There were also further lumps in the axilla, which were thought to be enlarged glands. The nodules and enlarged glands were removed on Oct. 23rd. (For these facts I have to thank Mr. Sydney B. Hulke, surgical registrar to the Middlesex Hospital.) The patient stated that "the old wound re-opened" in April, 1896, and from that time continued to discharge. In November, 1897, she noticed a lump in the left breast. She was brought to me by Mr. Elliott Browne in July, 1898, and was admitted into the London Hospital on July 11th. There was then an ulcerated surface over the third and fourth ribs, depressed at its centre and fixed to the subjacent parts, with thickened margins. Its general shape was that of an oblong with spurs projecting here and there, the dimensions of the oblong being three and a half inches by one and a half inches. In the right axilla was a depressed cicatrix fixed to the rib below, separate from the ulceration and without sign of recurrence of cancer. In the left breast was a lump of stony hardness which measured with callipers (the skin over it being therefore included) three and a half inches by two inches. The left nipple was drawn in. There were hard, enlarged glands in the left axilla. The patient had menstruated regularly until six months before admission. Since then menstruation had been irregular, the last time being three months before admission.

On July 12th both ovaries were removed and as soon as the vomiting caused by the anæsthetic had subsided the patient was put upon thyroid extract, five grains three times daily. This she has taken ever since. She left the hospital on August 5th. Her weight was then 12 st. 2½ lb. She came to report herself on Sept. 15th. The ulcer had completely healed. The left breast was much softer. Her weight was 13 st. 7½ lb. She was next seen on Oct. 14th. The scar in the right axilla was moveable. There was no distinct lump in the left breast and there were no enlarged glands in the left axilla. On March 28th, 1899, her weight was 14 st. 10 lb. There were some keloid-like nodules in the scar, but these had not grown and showed no tendency to break down. The left breast presented the characters of health, except that the nipple was retracted. Her right arm and hand swelled occasionally after scrubbing, but this had been the case since the first operation.

Two points call for comment. First, as to the relative importance of the two parts in the treatment: oöphorectomy and thyroid extract. Mr. Stanley Boyd thinks that oöphorectomy alone will explain the benefit in Beatson's cases. He has treated seven cases and Mr. Watson Cheyne two by oöphorectomy, but in only one was there benefit great enough

to be called cure. He has collected six other cases in which the information given was not enough to enable the cases to be tabulated, and out of the whole 15 in only four was there "relief worth obtaining." In the face of this experience I cannot agree with Mr. Stanley Boyd in thinking that oöphorectomy alone will explain the benefit. Mr. Stanley Boyd has published five cases in which thyroid extract was given. In one it was only given for a month; in another it was not begun till oöphorectomy had failed and recurrence had taken place; in three other cases he gave thyroid extract to patients whose ovaries had not been removed and in two of them some benefit seemed to follow. Page and Bishop have published a case in which cure followed administration of thyroid extract. Four cases have now been published of cancer treated by oöphorectomy *plus* thyroid extract and in three of them the cancer disappeared. I submit that the evidence at present before the profession goes to show that greater benefit results from the combination of oöphorectomy with thyroid extract than from either of them separately; and that it is desirable that the effects on cancer of the combination of oöphorectomy with thyroid extract should be tested as fully as possible.

Next, as to the word "cure." No one can say that these patients have been in the strictest sense of the word "cured" until they have been watched through the remainder of their lives. But I submit that to make cancer disappear is a much greater thing than to mechanically remove it with the knife; and if we can maintain that condition of the organism which led to the disappearance of already formed cancer tissue, we may reasonably expect that this condition will be incompatible with return of cancerous growths. These patients cannot develop new ovaries and they have been instructed to take thyroid extract for the rest of their lives. If they do so I think there is a sure prospect of freedom from cancer. In conclusion, I assert that oöphorectomy *plus* thyroid extract has given results which have not been approached by any other treatment of recurrent mammary cancer.

Harley-street, W.

BROMIDE OF STRONTIUM IN EPILEPSY.

BY ANTONY ROCHE, M.R.C.P. IREL., &C.,
PROFESSOR OF MEDICAL JURISPRUDENCE AND PUBLIC HEALTH AT THE ROMAN CATHOLIC UNIVERSITY MEDICAL SCHOOL, DUBLIN; EXAMINER AT THE ROYAL UNIVERSITY OF IRELAND, ETC.

I HAVE written comparatively so recently[1] upon this subject that it might appear unnecessary to return to it, but I find from the numerous letters which I have received from members of the profession that considerable interest has been excited and that whilst some of my correspondents have tried with success the system which I have advocated others apparently have failed to comprehend my former communications or have expected results which I never suggested as possible. For example, I never supposed that the bromide of strontium would improve the mental condition of children suffering from convulsions with congenital malformation of the brain or that it could benefit the mental faculties of persons with fits associated with advanced cerebral disease. The most to be expected in such cases from the bromide would be the lessening of the frequency of the attacks. Again, I never asserted, as some of my correspondents appear to think, that the bromide was invariably successful in all cases of even so-called idiopathic epilepsy or that the drug had simply to be given without any other treatment or regulation of habits, diet, &c., to be successful. It is a very elementary consideration in the treatment of epilepsy—as, indeed, it is in that of all diseases—that the individual case must be studied and treated and that the success in treatment of one medical man compared with that of another depends mostly upon the care and thoroughness with which this is carried out: the examination, for example, in each case whether any predisposing or exciting cause can be detected and removed. In epilepsy commencing in adult life the infection by syphilis or not should ever be remembered; Jacksonian attacks would always excite suspicion, but even when the form is the ordinary one that syphilis may be the cause I know from experience. I may say in passing that in such cases I give the iodide of strontium with the bromide. I find the strontium iodide more efficient and less depressing than the potassium salt. For some years I have used the strontium iodide not only in these cases, but in rheumatism, asthma, &c., in place of the potassium iodide, and I think it is more easily taken. To return, the habits of the patient require investigation. In the young masturbation is undoubtedly common in these cases. Whether we regard this as another evidence of mental change or as the cause of the disease, its continuance most injuriously affects the patient and the treatment. In the adult drink is too commonly an exciting, and often an incurable, cause. Constipation, many of my patients themselves declare, predisposes to an attack. How far this supports the theory of auto-infection or whether the constipation itself may be an indication of nervous derangement I need not now discuss. Intestinal worms are old "suspects" as an exciting cause. That in some cases they may possibly be so would appear from a case which I reported years ago in which two severe fits occurred in a boy, aged 10 years, the fits and the prediction of his future as an epileptic by a distinguished specialist alike ending in the passage of a worm after a dose of santonin. The presence or absence of any form of aura noticed by the patient or his friends is often useful in treatment. I have frequently found on careful questioning that some mental change is noticed by the patient's friends before the attack, though at first denied—changes in temper, want of power of concentration, &c. The time of day or night when the fits most frequently occur is also useful to know; the state of all the organs of the body, especially the kidneys, of course requires noting; and, lastly, any injury to the head. In connexion with this frequently an injury is mentioned which on investigation could have no influence; the public are naturally disinclined to admit the disease without some exciting cause, as that implies to their mind the admission of some hereditary taint. Having thus obtained a clear idea of the condition and surroundings of the patient, the regulations regarding diet, stimulants, and mode of life should be simply explained. In most cases I have no doubt that limiting the amount of animal food has a beneficial result. I frequently get the patients to abstain from it altogether for months. Of course, if I find that the patient loses flesh and feels the loss of it I do not press the dieting, but generally the patient lives and prospers as well upon a fish and milk as on an animal diet. The impression on my mind is distinctly in favour of such limitations, though I know that some eminent authorities do not agree with me in this. Stimulants are neither needed nor are they anything but hurtful. The patient should live in the open air as much as possible, avoiding alike the overstrain of modern life in business or pleasure or, on the other hand, the neglect of any occupation to interest the mind to a healthy extent. As to the method of giving the bromide the first consideration in each case is to find the dose which will in that case control the attacks, to increase the dose till that effect is produced, and to steadily and for a long period continue that dose. Two mistakes are commonly made. One is that the patient having taken the medicine finds the fits recur and concludes that it has failed in his case, the real reading being that enough has not been taken and that the recurrence is an indication for the increase of the dose. The other mistake, and a very common one it is among the poorer classes, is that the patient having taken the medicine no recurrence takes place for an unusual period and he thereupon concludes that he is cured and discontinues the medicine with the result that the fits return. It is therefore absolutely necessary to explain to these patients that the fits may recur for some time and that in any case the medicine must not be left off or omitted for any cause. It should be ascertained whether the attacks are more frequent at any particular time of day and the larger dose should be given, say, half an hour before that time and a second smaller dose could be taken 12 hours after. I generally commence with one drachm a day, giving 40 grains at the most threatened period and the other 20 grains 12 hours after. I give it in one of the vegetable infusions, and somehow I find that the quassia seems to agree best. Should the fits recur with one drachm I increase the dose to one and a half drachms and so on till I get the result. I have frequently given three drachms a day for weeks and have never had any symptoms of poisoning. The bromine rash is sometimes troublesome, but two and

[1] THE LANCET, Oct. 15th, 1898.

a half minims of arsenical solution in each of the two doses generally controls it and this can be continued for, say, six weeks and then omitted for a short period. It appears to me that the bromine rash is more troublesome in fair-haired people with thin skins than in dark, thick-skinned people. Besides the bottle containing the regular daily doses I order another called for convenience the "intermediate." This contains 20 grains to each half ounce and I direct the patient, should he have any aura, to take one tablespoonful every half hour till the sensation passes off. Most of my patients assure me that they have thus averted the pending attacks.

The next question is—How long must the patient continue to take the bromide? My advice is that if he finds no inconvenience from it except the rash he should continue it for an indefinite period. Some authorities, I know, propose to stop the medicine if there has been no return for a year. In this I do not agree. It is desirable in each case to find the smallest dose that will effect our purpose and to continue that. There are just two precautions which I would mention. First, it should be carefully seen that the medicine is pure; and, secondly, in country places care should be taken in seeing that the druggist does not substitute the potassium salt for the strontium.

As regards the practical results of this treatment I have now had for some years a considerable experience in its effects in no small number of cases. I have never met with a carefully investigated and persistently treated case in which the number of the attacks was not materially diminished and I have met with many cases in which there has been no return at all of the attacks even after an interval of so long as four years, the patients still continuing the medicine. When I remember the results produced by other modes of treatment and the unfavourable prognosis given by all writers upon this affection I cannot help thinking from its safety and success that it is worthy of extended trial. I have in this communication abstained from any discussion upon theoretical questions in connexion with this disease or of any other methods of treatment.

Dublin.

SHOT-FIRING ACCIDENT; AMPUTATION OF THE FOREARM WITHOUT AN ANÆSTHETIC; RECOVERY.

BY MONTAGUE D. MAKUNA, L.R.C.P. LOND., M.R.C.S. ENG.

THE patient, a man, aged 25 years, engaged in a colliery level worked by naked lights, was on Jan. 26th, 1899, preparing for a shot-firing in his heading. He had a candle in his right hand and explosives in the left. Through some misadventure the explosives burst, shattering his left hand and the lower third of the forearm. His face and the left side of his body were scorched and cut about by the débris of the pit flying against his body. He had a penetrating wound of the left cornea causing aqeous humour to escape and a penetrating wound of the neck injuring the right external jugular vein. He received no immediate help and lost a considerable quantity of blood. When first seen, at 12 noon, an hour after the accident, he was in agonies of pain and violently convulsed. The pulse was feeble and intermittent and the heart's action was spasmodic. He was given some brandy and milk, a tourniquet was put on his left arm, and a hypodermic injection of morphia sulphate ½ gr., atropine $\frac{1}{150}$ gr., and digitalin $\frac{1}{75}$ gr. was given. An hour later another hypodermic injection of morphia and atropine with codeine phosphate ½ gr. was given. In half an hour's time the convulsions ceased and the patient became quiet and commenced to sleep. The wounds all over his body were cleansed and dressed and preparations for the amputation of the forearm in the upper third were made with the assistance of Dr. Hartland of Aberavon at 4 P.M. The patient had by this time lost consciousness and corneal reflex and had become deeply comatose. Having had similar experience previously I decided to perform the amputation before the reaction set in without an anæsthetic but with provision for it should the patient rally. Cuff-shaped skin-flaps, with the slit on the ulnar side, were dissected up to within four inches of the elbow, and the shattered limb was severed by a straight cut with knife and saw. There was no hæmorrhage. The muscular structure was much swollen and livid. The arteries had considerably retracted from the wound. The tourniquet was unscrewed for fully three minutes, but no bleeding could be seen indicating the position of the arteries, only the wound became more moist. The axillary pulsation was feeble. The tourniquet was reapplied, the wound was washed out, the cuff was stitched up except in the slit to allow the discharge to escape, and the stump was dressed. The operation and the dressings were all thoroughly antiseptic and were completed in 35 minutes, during which time the patient made no effort to move. His breathing was heavy—24 per minute—and the right radial pulse was irregular and feeble—60 per minute. He continued comatose till 9 P.M. He was quite composed when roused and took some milk. On the next day the tourniquet was slightly relaxed for a few hours and the dressings were closely watched for hæmorrhage, but not any was seen nor did the patient's condition indicate any. The tourniquet was completely removed on the seventh day after the operation (Feb. 1st). The first dressings were changed on Feb. 3rd. The wound looked healthy and a wineglassful of clots of blood was removed from the side slit. The patient's temperature, which had kept down to 101° F. in the evenings from the third day after the operation, rose to 103° on the morning of Feb. 10th, when the second dressings were removed with some purulent discharge. The dressings were rechanged on Feb. 20th and on March 5th and lastly dry dressings with iodoform wool were applied on March 21st. The corneal wound of the left eye healed up but with opacity and collapse of the anterior chamber resulting in loss of sight. The right cornea was marked with two small scars. A bruit which was perceptible on the right external jugular vein for the first four weeks had disappeared. During his illness the patient was kept on light diet—milk, eggs, and beef tea—without any stimulants and was given a mixture of quinine, opium, and digitalis. The patient is going about now (April 9th, 1899).

Treherbert.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

SEAMEN'S HOSPITAL, GREENWICH.

A CASE OF ENTERIC FEVER WITH ULCERATION AND PERFORATION OF THE GALL-BLADDER; NECROPSY.

(Under the care of Dr. J. ANDERSON, C.I.E.)

INFLAMMATION and ulceration of the gall-bladder occurring in the course of typhoid fever have been noticed and recorded in no small number of cases and Chiari, amongst others, has written on the subject of "cholecystitis typhosa." Murchison has described a very typical case which was in the London Fever Hospital. A very striking instance of this condition occurred in a patient under the care of Mr. Monier Williams and in that case, as in the one recorded below, perforation into the peritoneal cavity occurred. Mr. Marmaduke Sheild[1] performed laparotomy and the patient recovered. The following case is of much interest and illustrates the difficulty which may exist in diagnosing so serious a condition. For the notes of the case we are indebted to Dr. R. W. Mayston, house physician.

A fireman, aged 27 years, was on March 7th, 1899, admitted into the Seamen's Hospital, Greenwich. A history of his illness was difficult to obtain on account of his inability to speak more than a few words of English. He went to the hospital immediately after his ship arrived in port. He stated that he had been ill with cough and pain in the chest for three weeks and had been at work almost up to

[1] THE LANCET, March 2nd, 1895, p. 534.

the time that the ship came into port. On admission into the hospital his temperature was 96° F. and the pulse was 100; he was very pale and thin and was in an exhausted condition. An hour after admission his temperature rose to 100° and four hours later was 103°, the pulse being 120 and the respirations 28. On examination the abdomen was found to be full, but it moved with respiration; it was slightly tender on palpation. The spleen was enlarged, coming down to the edge of the ribs. A few spots were found on the abdomen and the lower part of the thorax. The bowels were constipated. The heart was normal. As regards the respiratory system there was a slightly impaired note at the right apex behind; the vesicular murmur was good. At both bases behind fine râles were heard, especially on the left side, and these crepitations could also be heard over the præcordial area. There was no dulness or bronchial breathing at either base. An occasional rhonchus was heard over the front of the chest. Some blood-stained sputum was expectorated. The patient was quite conscious.

On March 9th the abdomen was more distended; more spots had developed. The bowels had been opened twice since the patient's admission and the motions, which were passed under him, were loose, of a light colour, and somewhat offensive. The condition of the lungs was unchanged. On the 10th the temperature rose to 105° and the patient was sponged, the temperature falling to 103·6°. The urine contained a trace of albumin. On the 11th the respirations averaged 44 to the minute; there was an impaired note at the right apex and crepitations were heard over both lungs back and front. Vomiting was troublesome. The abdominal condition was the same as before, no fresh spots having developed. On the 12th the temperature fell to 100·4°. The patient passed some blood with his motion (about three ounces); he vomited six times during the day. He was ordered to have two ounces of peptonised milk every hour. On the 13th the patient had been restless and had very little sleep. 10 minims of tincture of opium were ordered. On the 14th 15 minims of tincture of opium gave the patient about five hours' sleep, before which he was very restless and tried to get out of bed. The vomiting had stopped. Ordinary milk and lime-water were given. On the 15th the temperature was not above 103°, the respirations were 40, and the pulse was 112. About 8 P.M. there was some hæmorrhage, amounting to about five ounces, and an hour later about another six ounces. 10 minims of tincture of opium were given, the same dose being repeated in eight hours. All stimulants were stopped. On the 16th free hæmorrhage from the bowel occurred, about 35 ounces of bright blood being passed in the 24 hours. As the patient was in a drowsy condition opium was not ordered but one drachm of tincture of catechu and half a drachm of dilute sulphuric acid were ordered to be administered every four hours, and no stimulants were given. A starch enema with 20 minims of tincture of opium was ordered but was returned immediately. There was no fall of temperature with the hæmorrhage. On the 17th 10 minims of tincture of opium were given at two A.M. as six ounces of blood had been passed. The patient complained of pain in the upper part of the abdomen and of tenderness on palpation of the spleen and liver. The condition of the lung remained the same as before. On the 18th some diarrhœa occurred without hæmorrhage, typical pea-soup motions being passed. The patient had four ounces of brandy daily and was also given digitalis and strychnine. On the 19th he was very weak and still complained of slight abdominal pains but there were no signs of peritonitis. The pulse was rapid but full and the respirations were 52 and shallow. Râles were heard as before. The bases of the lungs were not examined, the patient being in such a weak condition. Inhalations of oxygen were resorted to and the patient seemed to revive considerably under its influence. Subsultus tendinum was present and the patient was picking at the bedclothes. On the 20th the inhalation of oxygen was continued for 20 minutes at a time. The pulse was rapid and the respirations were still rapid and shallow. No more hæmorrhage occurred. The temperature was 103·8°. On the 21st the pulse was very rapid and weak. Ether was injected but the patient died in the early morning.

Necropsy.—A post-mortem examination was made and the body was found to be very emaciated. The heart was normal. There were some old pleuritic adhesions over the lower lobes of both lungs and also slight effusion into both pleuræ. Both lungs were congested; there was some muco-pus in the tubes but no consolidation was observed. There was no general peritonitis and the intestines were only moderately distended. The stomach and pancreas were normal. The spleen was enlarged and soft. The liver substance was normal. There were numerous ulcers in the gall-bladder, the largest being about one-eighth of an inch across and of varying depths. One near the summit had some slight peritoneal adhesions over it. One of the ulcers on the left side and near the origin of the cystic duct had perforated and a small localised peritoneal abscess had formed, being about three inches long by one and a half inches broad, and being bounded by the gall-bladder, the right lobe of the liver, and the pyloric end of the stomach, with the lesser omentum. The walls of this abscess were stained a greenish-yellow with bile, as were also the ulcers in the gall-bladder. The ulcers in the gall-bladder were oval or circular in shape and were not limited to any one part. The edges were not thickened but undermined. There was some peritonitis over the site of each of the ulcers. In the last two feet of the ileum there were numerous typhoid ulcers, some reaching to the peritoneum and others exposing the transverse muscular coat. The edges were thickened and undermined. In some cases the Peyer's patches were swollen and red, but sloughs had not separated. The colon showed reddening and ulceration at its upper part.

Remarks by Dr. MAYSTON.—During the whole illness there were no symptoms to particularly draw attention to the gall-bladder and there was no evidence of a perforative peritonitis. During the whole attack the temperature averaged 102·8°, but towards the end the pulse and respiration rates increased.

CHILDREN'S HOSPITAL, NOTTINGHAM.

A CASE OF TETANUS SUCCESSFULLY TREATED WITH ANTI-TETANIC SERUM.

(Under the care of Dr. LEWIS MARSHALL.)

THERE are still many points in connexion with the treatment of tetanus by antitoxin which are by no means clear. Although it may be acknowledged that the employment of the serum does in some cases prove of much benefit, yet it is difficult to lay down any very exact rule as to the kind of case in which this treatment will prove beneficial. It may, however, be said that the antitoxin is more useful in the more chronic cases, those in which there has been an incubation period of more than 10 days. A point on which new light is wanted is the question of the dose of the serum which should be employed. It is highly probable that the more acute the case the greater and the more frequent should be the doses of antitoxin administered, but trustworthy accounts are wanting as to the maximum amount which may be injected. Steiner[1] advised that large quantities of fluid should be given in order to wash the toxins from the body and most observers agree that symptomatic treatment of the spasms by bromides and chloral should be employed. Comparatively recently it has been suggested—and the suggestion has been carried out—that in very severe cases the antitoxin should be injected directly into the brain,[2] and successful cases have been recorded; but it is difficult to say at present whether this method of administration is likely to be advisable. With regard to the results obtained by the antitoxin treatment Weischer[3] collected 98 cases in which the serum treatment was adopted and of these 57 recovered. We anticipate a wider and an even more successful employment of tetanus antitoxin when we shall have learnt more as to the most suitable modes of administering it. For the notes of the case we are indebted to Dr. W. McKay, house surgeon.

A girl, aged 12 years, had two weeks before her admission into the Children's Hospital, Nottingham, been burned on the right arm through her pinafore catching fire and was at first treated at home. At the end of two weeks she became very ill, with pains in the neck and back, difficulty in swallowing, and sleeplessness, in consequence of which she was taken to the hospital on Jan. 10th, 1899. On

[1] Wiener Klinische Wochenschrift, 1897, No. 36.
[2] Du Hamel: Medical News, Philadelphia, Oct. 22nd, 1898.
[3] Münchener Medicinische Wochenschrift, Nov. 16th, 1897.

admission the patient was evidently very ill, being pale and cold, with a clammy skin. The head was firmly retracted and the eyes were fixed. The mouth was tightly closed so that the teeth could with difficulty be separated for a quarter of an inch and there was well-marked risus sardonicus. The arms were stiff and flexed while the legs were extended, but there was as yet no opisthotonos. The temperature was 99° F. and the pulse was 75, regular, and of good volume. At first there was a dry hacking cough which caused the child much pain. The burned surface, which involved the whole depth of the skin, extended over the inner surface of the right arm and the axilla. The granulations were in a grey sloughy condition. 10 grains of bromide of potassium with five grains of chloral hydrate were given every four hours and the burn was treated with antiseptic dressings. On Jan. 11th the opisthotonos was well marked and permanent and the abdominal muscles were quite hard and board-like. There were no exacerbations of the spasms, the condition being one of permanent tonic contraction. The child was able to take fluid foods well and her appetite was good. Two injections each of five cubic centimetres of anti-tetanic serum were made beneath the skin of the thighs at 11 A.M. and 7 P.M. respectively and the dose of bromide and chloral was doubled. She slept well during the night of the 11th, but on the morning of the 12th the face became cyanosed and the muscles of respiration were fixed as in the tonic stage of an epileptic seizure. This was followed by twitchings of the fingers. A similar attack occurred during the afternoon. 10 cubic centimetres of the serum were injected under the skin of the abdomen. On the 13th the arching of the back was very pronounced and this increased at times in a spasmodic manner. The risus still continued to be well marked and was constant. 10 cubic centimetres of the serum were injected at 10 A.M. and again at 4 P.M. under the skin of the thighs. The pulse was weaker and more rapid, being 152. 20 grains of bromide of potassium and 10 grains of chloral hydrate were given every six hours. On the 14th there was incontinence of urine all day. The arms were stiff but the fingers could be easily moved. In the evening the opisthotonos became less marked. 20 cubic centimetres of the serum were given in two injections. On the 15th the patient had slept very well throughout the attack. In the morning she was lying with her knees drawn up and could move the legs voluntarily, while the facial muscles of expression were not so fixed and the risus was much less pronounced. 10 cubic centimetres of the antitoxin were injected. On the 16th the lower limbs were more moveable. At intervals the facial muscles became quite relaxed, especially during sleep, although the teeth were still kept rigidly together and could not be separated for more than from one-eighth to a quarter of an inch. The neck and abdominal muscles were not so tense as formerly. Incontinence of urine still persisted and the bowels were evacuated unconsciously on the 16th. 10 cubic centimetres of the serum were again injected. Gradual improvement was shown from this time forward. 10 cubic centimetres of the serum were injected on each of the two following days and a final injection of the same quantity was given on the 20th. By this time the muscles of the neck, abdomen, and limbs were quite relaxed, although the trismus was still present. By the 24th, however, the mouth could be opened one and a half inches and the patient for the first time since her admission to the hospital chewed some food. The total quantity of serum used was 110 cubic centimetres, given in 12 injections and extending over a period of nine days. In reference to the irritant effect of antitoxin injection it is interesting to record that on Jan. 21st, the day after the last injection, a rash consisting of fine papules appeared on the inner side of the left thigh and on the right thigh a typical urticaria appeared. Both these rashes were over the sites of injections and disappeared within 24 hours. On the 28th a well-defined rash broke out over the trunk and limbs, on the former consisting of raised papules, while on the latter there was a diffuse redness like erysipelas. The skin of the face remained quite clear. This rash lasted four days and disappeared first from the limbs. The night temperature remained at about 102° throughout.

Remarks by Dr. MARSHALL.—This case is recorded simply as an addition to those already published and it would appear that it is reasonable to infer from the manner in which the improvement declared itself in relation to the injections that the anti-tetanic serum was the main curative agent at work.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Gastrectomy.—Splenic Anæmia.—Sprue.—Casts of Dilated Right Ventricle.—Paramœcium Cysts in the Liver.—Peculiar Lardaceous Liver.—Exhibition of Specimens.

A MEETING of this society was held on April 18th, the President, Dr. PAYNE, being in the chair.

Mr. T. F. CHAVASSE (Birmingham) read a note on a case of Gastrectomy and exhibited a specimen. The patient was a man, aged 64 years, who was admitted into the General Hospital, Birmingham, on Oct. 8th, 1898, under the care of Dr. Rickards, suffering from carcinoma of the stomach. An exploratory incision made by Mr. Chavasse on Nov. 3rd showed that the growth had affected the whole of the organ and that the adhesions were not sufficient to negative gastrectomy. This was accordingly performed by the method advocated by Schlatter and the stomach was removed entire. The attempts made to unite the gullet and the jejunum by means of a Murphy's button failed owing to the friability of the œsophageal walls, which were found at the necropsy to be infiltrated with new growth. A duodenal fistula was therefore established through which nourishment was given until the patient's death, from cardiac failure, on Nov. 5th, 40 hours after the completion of the operation. The stomach was small and much contracted, measuring nine and a quarter inches along its greater curvature. The organ was almost entirely solid and its cavity was nearly obliterated. Its weight was six ounces. A perforation of about the size of a sixpence existed on its anterior aspect close to the cardiac end. Microscopically the growth presented all the features of scirrhous carcinoma. Numerous glands showing secondary growths were found along the smaller curvature. No general peritonitis existed; the cavity where the stomach had rested was dry and entirely cut off by adhesions.

Dr. BERTRAM HUNT showed two cases of Splenic Anæmia with Internal Hæmorrhages in Infants. The patients were children of eight and 16 months respectively. In both the spleen occupied the greater part of the left side of the abdomen. Both were very anæmic, the blood count in the first being 70 per cent. red corpuscles and 28 per cent. hæmoglobin, and in the second 30 per cent. red corpuscles and 25 per cent. hæmoglobin. In neither case was there excess of white corpuscles. In one case there were multiple hæmorrhages into the wall of the large bowel, over many of which the mucous membrane had ulcerated. In the other case there was an extensive hæmorrhage on the surface of the brain between the dura mater and arachnoid. The presence of these hæmorrhages, the large size of the spleen, and the microscopical evidence of fibrosis of the Malpighian corpuscles and splenic pulp separated these two cases from the more common cases of rickety anæmia with enlarged spleen. Congenital syphilis and infantile pseudo-leukæmia could also be excluded.—The PRESIDENT remarked that the description of the second case was rather suggestive of scurvy and asked if there were any indications of this.—Dr. HUNT, in reply, said that the child had been fed on fresh cow's milk throughout and there were no signs of scurvy during life.

Dr. J. H. DRYSDALE showed specimens from three cases of Sprue, two being in men and the third in a woman. All of them had visited or lived in countries where the disease was common. All showed during life great emaciation, a smooth, wasted tongue, and passed frequent loose white stools. Dr. Drysdale thought that the normal pigment was present although masked by the fatty matter passed, as an alcoholic extract was of a yellow colour. Post mortem they all showed thinning of the stomach and in the intestine there were alternately regions where the walls were thinned, so that print could be read through them, or thickened by submucous deposit. In two of the cases there was ulceration resembling tuberculous ulceration to the naked eye although not microscopically. There was normal bile in the gall-bladder. In one case there was a cirrhotic change in the pancreas, a condition which had been met with by other observers. Bacteriological examination did not throw any light on the nature of the disease but all the cases were of long standing.—Dr. ROLLESTON said that the presence of changes in the pancreas was of great

interest, as Dr. T. J. Walker of Peterborough had published a paper on some cases of obstruction of the pancreatic duct in which white stools like those in sprue were constantly present. Dr. Walker thought that without the pancreatic secretion the normal pigment of the fæces was not formed.—The PRESIDENT said that he had seen two cases and the second had been diagnosed previously as one of pancreatic disease. Both the white colour and the amount of fermentation in the fæces were very striking. The bacterial origin of the disease was strongly suggested by the fact that it was often caught by a visit to countries in which it was prevalent. Many of the cases presented a train of mental symptoms in which melancholia or hypochondria predominated and he asked if there was any affection of the nervous system in Dr. Drysdale's cases.—Dr. W. J. HADLEY asked if there was any difference in the colour of the stools in those cases which recovered and those which terminated fatally.—Dr. DRYSDALE, in reply, said that there were no special nervous symptoms in his cases. The brain and spinal cord were not examined.

Dr. STACEY WILSON (Birmingham) exhibited casts of Hearts in which there was Dilatation of the Upper Part of the Right Ventricle causing an increase in the size of the ventricle upwards and to the left. He thought that this type of dilatation was not infrequent and that it had a bearing upon the causation of the systolic murmur which was commonly heard over the pulmonary artery in anæmic dilatation of the heart. This upward dilatation of the right ventricle must cause shortening of the pulmonary artery and consequent relaxation of the wall of the vessel. Further, that alteration in the course of the artery must also result from upward dilatation of the right ventricle, the artery becoming more horizontal in its course than normal. The causation of the systolic pulmonary murmur of anæmia was as follows. The relaxed artery yielded to the blood-pressure and an aneurysmal dilatation of the artery resulted. Thus the production of an aneurysmal murmur in the artery was favoured. Further, owing to the change in direction of the pulmonary artery the blood was not thrown into the lumen of the artery during the systole of the ventricle but impinged upon the anterior wall of the artery. These two conditions, aneurysmal dilatation of the artery and the direction of the blood-stream against one of the walls, were eminently favourable to the production of an aneurysmal murmur in the pulmonary artery.—Dr. ROLLESTON asked if this dilatation of the pulmonary artery could have any bearing on the production of the diastolic murmur which was sometimes heard on the left side and was supposed by some to be due to a suction action of the left ventricle. Dr. Graham Steell believed it to be due to pulmonary regurgitation and Dr. Wilson's specimens seemed to give that theory some support. If the dilatation of the right ventricle were the cause of the murmur in chlorosis why did it not occur when the ventricle was distended to a much greater extent from backward pressure in cases of mitral disease? The observations bore out the view that the upward extension of the cardiac dulness was due to the pulmonary artery and not to distension of the left auricle.—Dr. GARROD asked what explanation Dr. Wilson gave of the increase of loudness of the so-called hæmic murmurs when the patient lay down.—The PRESIDENT said that the method of injecting the heart with paraffin before making casts was a valuable one and Dr. Stacey Wilson's views were novel. He thought that an upward increase of the cardiac dulness in cases of chlorosis was almost constant after a certain time. Some had suggested that the so-called pulmonary murmur was produced by the dilated left auricle pressing against and indenting the pulmonary artery and he asked whether Dr. Wilson had drawn any conclusions from his specimens. It was well known that a similar murmur was caused in some cases of pleural effusion when the heart was pushed up, the physical condition being then much the same as shown in Dr. Wilson's casts. He had at the present time two cases in his wards—one of chlorosis and the other of pleural effusion—and both had similar murmurs.—Dr. WILSON, in reply, said that he had been unable to indent the pulmonary artery by distending the left auricle with wax. He thought that there was often very great dilatation of the heart in chlorosis, although it might be found contracted after death owing to rigor mortis. His observations had convinced him that there was upward extension of the cardiac dulness in chlorosis proportional to the loudness of the murmur. He found that when the chlorotic patient was recumbent there was increase of the dulness as well as increased loudness of the murmur. He explained this by the different position of the heart. In the upright position it hung lower and drew the pulmonary artery tight, while in the recumbent position the artery was allowed to relax and dilate.

Dr. A. E. RUSSELL and Dr. FARQUHAR BUZZARD showed a Liver containing Paramœcium Cysts. The liver was taken from a man, 59 years of age, who died from carcinoma of the pylorus. The liver was normal except for the presence of a number of cysts in the region of the portal canals which contained bile-stained caseous matter in which Dr. Buzzard found living paramœcia. The cysts probably originated in the bile-ducts and were lined by ordinary fibrous tissue. Although a number of cases had been recorded in which paramœcia had been found in the intestine they knew of no other in which they had occurred in the liver.

Dr. W. J. HADLEY showed a peculiar Lardaceous Liver from a man who suffered from ascites, jaundice, and enlargement of the liver and spleen. At the necropsy there was enlargement of the liver, spleen, and kidneys. Their appearance was that of lardaceous disease and the microscope showed the presence of a homogeneous material in the positions in which amyloid degeneration was met with. But this material was unaffected by the stains from amyloid material except a few points in the Malpighian bodies of the kidneys. Sections were stained with iodine, iodine and sulphuric acid, thionine, and methyl violet, but the material stained with none of them. Nor did it give the staining reactions for hyaline degeneration or for fibrin. Therefore, since anatomically it corresponded with amyloid degeneration but failed to give the staining reactions he was inclined to call it achromoamyloid degeneration.

The following card specimens were exhibited:—

Dr. J. R. LORD: (1) Small Aneurysm of the Left Renal Artery and Thrombosis, subsequent Atrophy of the Left Kidney and Enlargement of the Right; (2) a Pleural Cyst; and (3) a case of Hernia of the Intestines due to Adhesions.

Dr. MORLEY FLETCHER: Localised Atrophy of Skull in an old woman.

CLINICAL SOCIETY OF LONDON.

Wound of Aberrant Artery in the Groin.—Syphilitic Stenosis of the Bronchi.—Involvement of the Musculo-spiral Nerve in Fractures of the Humerus.—Skin Affections in cases of Granular Kidney.

A MEETING of this society was held on April 14th, the President, Mr. LANGTON, being in the chair.

Mr. W. G. SPENCER described an exceptional case of Wound of a Large Superficial Inguinal Artery in which the Blood was flowing from the Trunk to the Thigh. The accident occurred when he was laying open a tuberculous sinus in the groin, an artery of the size of the brachial being wounded. The bleeding was at once controlled; no complication occurred during the healing of the wound nor was the circulation in the limb disturbed. The point at which the artery was wounded was just in front of Poupart's ligament where the skin and subcutaneous tissue were much infiltrated by tuberculous disease. When the vessel had been tied above and below the wound and the artery divided between the ligatures the upper end retracted and pulsated strongly; it was then situated immediately beneath the skin one inch above and a little internal to the middle of Poupart's ligament and resembled the brachial artery in an amputation stump. The lower end neither retracted nor pulsated. No accompanying vein was seen. The common femoral could be felt behind. On the opposite side an artery could be felt crossing Poupart's ligament close beneath the skin distinct from the common femoral artery. Professor Thane had not been able to throw any light upon the origin of this exceptional vessel. The artery was clearly given off somewhere from one of the iliac arteries, and after reaching the abdominal wall crossed in front of Poupart's ligament to be distributed to the inner side of the thigh. The only likely explanation was that it was a superficial obturator artery. To this there was the obvious objection that the obturator artery was essentially a deep one and that its aberrations had been closely studied in connexion with femoral hernia. The provisional name, "superficial inguinal," was therefore employed in the absence of any information as to the origin of the vessel.—Mr. CLEMENT LUCAS suggested that the artery which Mr. Spencer met with might have been an aberrant branch of

the deep epigastric artery. He had seen branches of considerable size perforating the superficial muscles over that artery.—The PRESIDENT also thought that the vessel might have sprung from the deep epigastric artery and asked from what direction it appeared to come.—Mr. SPENCER said that on the side operated on the tissues were so much thickened that nothing could be made out as to the course of the vessel. On the healthy side a small artery could be made out distinct from the common femoral in which blood was flowing from the trunk into the thigh. He thought that Mr. Lucas's explanation was very likely the correct one.

Dr. ROLLESTON and Dr. CYRIL OGLE communicated the notes of three cases of Syphilitic Stenosis of Both Bronchi. Case 1 was that of a woman, aged 25 years, who went to St. George's Hospital on Jan. 3rd, 1899, complaining of cough and loss of weight. There was stridor but no alteration of voice. Air entered both lungs equally. Septic pneumonia developed and terminated fatally. There was fibrosis of the lungs and thickening of the pleura; the bronchial glands were acutely swollen. There was a localised narrowing of the bronchi and dilatation, probably from retention of secretion, of bronchial tubes beyond. There was extensive syphilitic disease of the liver. In case 2 the patient was a man, aged 29 years, who was admitted to St. George's Hospital under the care of Dr. Whipham in November, 1896, for increasing difficulty in breathing. There was stridor and air did not enter the left side as well as the right. The larynx was normal. Both testicles were enlarged. He was given iodide of potassium, but the dyspnœa increased and death ensued from septic pneumonia. There was narrowing (three-sixteenths of an inch) of both main bronchi due to thickening of the bronchial wall. There was no sign of recent ulceration. The tubes beyond were distended with yellow mucus. The testes contained gummata. Case 3 was that of a man, aged 29 years, who was admitted to St. George's Hospital, under the care of Dr. Cavafy, on Sept. 24th, 1897, for increasing shortness of breath and stridor. There was syphilitic perforation of the hard palate. Tracheotomy gave no relief. At the necropsy both bronchi were found to be much stenosed. There was no syphilitic disease of the other viscera. Examination of published cases showed that syphilitic stenosis of the bronchi was usually combined with a similar lesion in the trachea and that syphilitic stenosis of the bronchi alone was rare. Reference was made to four other cases of stenosis of both bronchi and three of one bronchus, making with the three cases described that evening 10 in all. The average age of these 10 cases was 36½ years, only two being above 40 years; the sexes were almost equally affected. In the cases brought forward by Dr. Rolleston and Dr. Ogle it seemed probable to them that administration of iodide of potassium had done harm, inasmuch as it increased the secretion in the obstructed bronchial tubes. This secretion accumulated and by undergoing decomposition changes set up septic bronchitis, broncho-pneumonia, and fever from septic absorption. In order to avoid this it was recommended that full doses of belladonna should be combined with the iodide so as to prevent the secretion of mucus from the bronchial mucous membrane.—Mr. LUCAS thought that little could be hoped for from treatment in such cases as the lesions were of a cicatricial nature, like leucoplasia of the tongue and fibrosis of the testis. He had met with two cases of syphilitic stenosis of the trachea in which the lumen was so diminished that a tracheotomy tube could not be passed down.—Dr. WEST said that the cases must be very rare, as he had never seen one during many years' experience as pathologist to two hospitals. He remarked that stenosis might be due in some cases to the result of inflammation extending from the lymphatic glands.—Dr. ROLLESTON, in reply, said that he thought that the cases might be more frequent than was supposed. Out of all the cases recorded half came from Guy's Hospital, probably because attention had been drawn to their occurrence and a look-out kept. He mentioned one case in which this condition was diagnosed and in which recovery followed treatment.

Mr. CLEMENT LUCAS read a paper on two cases of Ununited Fracture of the Humerus caused by the Interposition of the Musculo-spiral Nerve between the Fragments. The first case related occurred in a man, aged 41 years, and the fracture, which was compound, was caused by the kick of a horse on Nov. 12th, 1895. He was taken to a local infirmary and put up in a rectangular splint. Some sloughing of skin occurred. On Feb. 2nd, 1896, an operation was performed and a wire applied, as union had not taken place. On April 11th, 1896, he was discharged, union having still failed to take place, while musculo-spiral paralysis was established. He was admitted into Guy's Hospital on May 12th, 1896. There was a false joint at the junction of the upper two-thirds with the lower third of the left humerus and scars due to the injury and operation. The elbow was fixed in a semi-flexed condition; the finger and wrist were also flexed and fixed. Loss of sensation existed over the distribution of the radial nerve. The splint was removed, massage, passive movements, and electricity were applied till the movements of the elbow were restored and some pronation and supination and partial movement of the fingers and wrist were rendered possible, but musculo-spiral paralysis remained. On June 12th, 1896, an incision was made on the back part of the arm and the musculo spiral nerve was traced up to where it was found engaged between the fragments. The wire encircling the fragments was found to include the fibrous extension of the nerve. The bone was again resected and wired and the nerve being cleared for about two inches above and below was also resected, about an inch of the fibrous part being cut away and the ends united by means of sterilised silk. Primary union of the skin wound took place and he left the hospital soon after with the arm in a plaster case. Three months later it was found that union was still incomplete and the bone was again exposed and a screw as well as a wire were applied to the fractured ends and the nerve was again resected. A sinus remained as a result of this operation till November when it closed. The bone was then firmly united but the paralysis remained. Electricity and massage were used and a useful arm for carrying was obtained but the nerve had not recovered when last seen. The second case was that of a man, aged 30 years, who was admitted into Guy's Hospital under the care of Mr. Clement Lucas on Oct. 9th, 1896, suffering from an ununited fracture of the right humerus and musculo-spiral paralysis. Five months before admission, when riding a bicycle, he was run into by a cart, the shaft of which struck his right arm causing the fracture. It was put in splints about an hour later and these remained on seven weeks. Afterwards for three weeks he had a poroplastic case. At the time of the accident and afterwards the patient suffered severe pain down the back of his forearm on the outer side, extending to the thumb and forefinger. On Nov. 15th, 1896, Mr. Lucas made an incision between the triceps and brachialis anticus four and a half inches in length on the antero-external aspect of the arm, and finding the musculo-spiral nerve traced it up to where it was engaged between the fragments. The nerve was detached, resected, and united by silk, and the fragments of bone were resected and united by a screw and an encircling wire, primary union following, and the patient left the hospital with his arm in a plaster-of-Paris case on Dec. 6th, 1896. He returned in a month, when it was found that good bony union had taken place; when last seen, however, though he had a useful limb, the power of extension at the wrist had not been recovered.—The PRESIDENT related the case of an old woman who was then under his care at St. Bartholomew's Hospital with Fracture of the Humerus which had led to musculo-spiral paralysis and severe neuralgic pain. He exposed the bone and found that there was an oblique fracture, the nerve lying behind the end of the upper fragment. The nerve was nearly divided and there was a bulbous swelling on its distal as well as its proximal extremity, a condition which he had seen in other cases of the kind. The fracture was so oblique that he had to resect a considerable portion of the bone. He sutured the nerve and wired the bone. The state of the bone was satisfactory, but little improvement had taken place in the paralysis and Mr. Langton thought that less improvement usually took place in the musculo-spiral nerve after suture than in other nerves.

Dr. WEST read a paper on Skin Affections in Granular Kidney. Rashes associated with œdema were for the most part erythematous in character, transitory in duration, produced few symptoms, and unless general had but little clinical importance. If the skin was broken, as after puncture or when blebs had formed and burst, secondary infection might occur and rashes of an erysipelatous character might arise, or phlegmonous inflammation or even gangrene might develope, but these were accidental events. Rashes without œdema occurred almost exclusively in the course of "granular kidney." They were generally widespread and often universal, of great

obstinancy and of grave significance, taking the form of erythema, pityriasis rubra, dermatitis exfoliativa, general eczema, and lichen. They were rarely hæmorrhagic. The following cases were described. 1. General erythema in a man aged 42 years under treatment for uncontrollable diarrhœa. The erythema itched greatly and persisted until death. Post mortem no lesion was found except granular kidney. 2. Pityriasis rubra; two cases. (1) A man, aged 47 years, admitted for the rash and most extreme asthenia. The signs of granular kidney were well marked. He improved in the hospital, but shortly after, having lost ground again, he died from uræmic coma. (2) A woman, aged 41 years, admitted also for the skin eruption and extreme asthenia. The rash in the course of time disappeared, but the asthenia continued, and she ultimately died from exhaustion. 3. Dermatitis exfoliativa; two cases. (1) A man, aged 48 years, admitted for the rash. He presented clear signs of granular kidney. The rash improved, but did not entirely disappear, and the patient died shortly after reaching home. (2) A woman, about 44 years of age, who was in the hospital for a surgical affection. The rash developed, signs of granular kidney were discovered, and she died shortly afterwards from asthenia. 4. A papular lichenous eruption. One case occurred in a man, aged 40 years, which was attended by a rise of temperature, and as small-pox was prevalent the question was raised as to its being one of variola, to the papular stage of which it bore some resemblance. The man died soon afterwards and granular kidneys were found. The second case was that of a woman, aged 52 years, whose chief symptoms were vomiting, diarrhœa, and asthenia, and who died in uræmic coma. The rash appeared 14 days before death. It rapidly spread over the whole body. The papules were in some parts of considerable size and resembled those of urticaria. In a third case, that of a woman, aged 20 years, the papules were of small size and developed 12 days before her death. In this case also the chief symptoms were vomiting, diarrhœa, and asthenia, and she also died comatose. Dr. West remarked that the cases in which these rashes appeared almost invariably ended fatally, and usually before long. The rashes occurred only late in the disease and when the signs of granular kidney were well marked, though not infrequently overlooked. The association of a generalised skin eruption with albuminuria was of great importance, and if the cause of the albuminuria was granular kidney it was of the gravest significance, for the patient would soon die, not from the skin affection, but from the granular kidney.—Dr. H. D. ROLLESTON said that he had seen some of the cases published by Dr. Le Cronier Lancaster which had been quoted by Dr. West and had made examinations of the kidneys. In the production of these eruptions there appeared to be some toxic factor which was not uræmia or the rashes would not be so rare. Possibly in some cases drugs might be the exciting cause and in others some poison of intestinal origin, and in this connexion it was of interest to note that several of Dr. West's patients suffered from diarrhœa. Possibly in the cases of extensive dermatitis there was a secondary organismal infection such as occurred in connexion with the pleural and pericardial serous membranes in advanced cases of Bright's disease. He asked whether there was any connexion between this condition and the epidemic skin disease which was attributed by Dr. Savill to an organism. Flexner had observed that persons suffering from chronic diseases seldom died from their direct effects but usually from secondary infections, and had further found that the blood of men dying from chronic disease had a much weaker germicidal action than that of a healthy man.—Dr. COLMAN mentioned a case of a papular lichenous eruption occurring in a tabetic patient which closely resembled that in one of Dr. West's cases and which was also suspected to be one of small-pox in its early stage. There was intense itching and the patient died from asthenia after a few days' illness and at the necropsy advanced granular change was found in the kidneys. Like albuminuric retinitis the occurrence of these eruptions appeared to be of very grave significance.—Dr. LONGHURST mentioned a case under his care in which purpura had occurred in the legs of a patient suffering from Bright's disease.—Dr. TOOGOOD said that the epidemic skin disease mentioned had been prevalent in many of the infirmaries, but that the majority of medical superintendents held that it was not due to an organism but to some toxin taken with the milk, as all the affected infirmaries were supplied by the same firm and when the milk-supply was changed there were no more cases.—Dr. WEST, in reply, said that the object of his paper was to draw attention to the occurrence of these eruptions and not to explain the mode of production. But in the present defective state of knowledge with regard to uræmia he thought that it would be rash to say that they were not due to some of the conditions at present grouped under that term. He had no doubt that the acute and chronic forms of uræmia, for instance, were due to different poisons, and these eruptions belonged to the more chronic forms.

SOCIETY OF ANÆSTHETISTS.

Nitrous Oxide Gas and Oxygen as an Anæsthetic in Surgical and Dental Operations.—Fatality after the Administration of Gas and Oxygen and Chloroform.

A MEETING of this society was held on March 17th at 20, Hanover-square, W., Dr. DUDLEY BUXTON, President, being in the chair.

Mr. BELLAMY GARDNER read a paper on Nitrous Oxide Gas and Oxygen as an Anæsthetic in Surgical and Dental Operations. He referred to the well-known characteristics of the anæsthesia obtained by this mixture, narrating the signs associated with it. With regard to the use of this mixture in dental surgery Mr. Gardner pointed out that short operations such as tenotomy, catheterisation, moving stiff joints, pelvic examination, &c., could be satisfactorily performed under its influence. After the administration had lasted a few minutes from 15 to 20 per cent. of oxygen was required to avoid muscular rigidity. The actual anæsthesia was not so profound as that obtained by chloroform or ether; the liability to the excitation of reflexes of adjacent limbs, &c., or reflex alteration in respiration was increased. Retching movements and sickness could not be controlled by "pushing" this anæsthetic, hence its value to boys and girls between 10 and 15 years of age was lessened. Florid, alcoholic, and muscular men and small children were not good subjects. With children under five years of age Mr. Gardner had not met with success. The administration itself could only be achieved by the expenditure of 40 gallons of the mixture over a quarter of an hour; thus two 50-gallon bottles of gas and one 24-gallon bottle of oxygen would be required for an operation taking over half an hour. The possibilities of the mixture, according to Mr. Gardner, were limited by (1) the production of only a moderately profound anæsthesia with tendency to muscular rigidity reflexes; and (2) its unsuitability for young children.

Mr. ALEXANDER GRANVILLE read notes of a case ending fatally after the Administration of Gas and Oxygen and Chloroform. The patient, aged 17 years, was apparently healthy. The operation was for radical cure of varicocele. Gas was given first and anæsthesia was readily induced. Oxygen was allowed to mix freely with the gas. Slight duskiness was noticed at times which was relieved by giving more oxygen. This mixture was employed for 20 minutes and the operation lasted double the expected time, the supply of gas ran short, and the patient resumed consciousness; he moved, groaned, and the operation was temporarily suspended. His pupils became small, his breathing was regular, and his pulse was 116. Chloroform was then administered, when after four or five minutes the pulse, which was being watched all the time, suddenly weakened. The chloroform was at once withdrawn, the pulse quickly became imperceptible, and the breathing continued deep and regular for about five minutes longer. Every effort was made to restore the patient but without success. Mr. Granville thought that the case showed the inadvisability of giving chloroform after gas and oxygen, as he had little doubt that the patient's heart became dilated during the administration of the gas and oxygen and that the chloroform, although given in small quantity, still further permitted dilatation and finally inhibited the heart's action. The gas and oxygen, he thought, were accessory before the fact.—Mr. NOBLE mentioned a case in which gas and oxygen were administered and when the anæsthesia was complete cyanosis became marked although stertor and jactitation were absent. A tooth was extracted when respiration at once stopped, but after pulling forward the tongue and compressing the

thorax respiration recommenced after two minutes, being slow, shallow, and sighing. The same patient had taken gas previously with a similar cessation of respiration.—Mr. BELLAMY GARDNER and Dr. FLUX deprecated the death being attributed to gas and oxygen.—Dr. SILK'S experience went to show that the after effects of gas and oxygen were more varied and more frequent than those consequent upon nitrous oxide alone. He pointed out that the physiological effects of the gas and oxygen might persist in the individual even when he appeared to resume consciousness, and it was quite conceivable that chloroform might increase these effects and finish what the mixture had commenced. He cautioned against the mixture being employed indiscriminately, as no doubt its value would thereby be lessened.—Mr. CROUCH narrated a case of a patient to whom he gave gas diluted with air and found evidence of dilatation of the heart during the administration. He had had precisely similar experience in giving gas with oxygen, in which case he carefully noted the condition of the heart.—The PRESIDENT spoke a few words of warning against the elevation of the mixture into a kind of panacea among anæsthetics. He had found that many persons had formed the most extravagant conception of its possibilities and were not aware of its limitations.—Dr. MCPHAIL having narrated his experiences Mr. BELLAMY GARDNER replied.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Antiseptics in Food.

A MEETING of this society was held on April 14th, Dr. E. GWYNN, President, being in the chair.

Dr. A. HILL read a paper on the Use of Antiseptics in Food. It was under many circumstances necessary to preserve foods from decomposition and for this purpose drying, smoking, salting, and heating, followed by exclusion of air, with or without the addition of oil or sugar were variously applicable and harmless. Salt was distinguished from other chemical preservatives by being a normal constituent of the animal body, the ingestion of between half an ounce and one ounce daily being necessary to health. The antiseptics which he would consider were chemicals foreign to the living body and exerting physiological actions of which advantage might be taken by the physician in the treatment of disease, but the inconsiderate consumption of such substances was presumably injurious to persons in health. Perhaps those most widely used at the present time were boric acid, borax, and salicylic acid, though of late a solution of formic aldehyde, under the name of formalin, had been extensively employed. Between 1896 and 1898 Dr. Hill had examined 1016 samples of milk, of which 59 were preserved by boric acid and 29 (of 600 only examined for it) with formic aldehyde. Boric acid was found in 216 out of 574 samples of butter and in 28 out of 33 of margarine. Boric acid was present in five out of six samples of cream, one containing salicylic acid also. Four out of seven samples of sausages, four out of six of ham, all of four hams and tongues, one out of three pork pies, one of two samples of pickled meat, and one of two polonies, five out of six samples of jam, five out of 11 of ipecacuanha wine, and one out of 12 of sherry contained salicylic acid. Benzoic acid had been used in France since the prohibition of salicylic acid. Sulphurous acid was widely employed in the treatment of wines, beers, lime juice, &c., and fluoride of sodium, a powerful antiseptic, but in doses of a few grains almost a poison, had been so too. As to their effect on digestion the case of formic aldehyde admitted of no doubt; one part per 1000 of milk rendering the casein insoluble in pepsin and hydrochloric acid, and one part of formalin (a 40 per cent. alcoholic solution of formic aldehyde) to 2000 parts by weight of fish, hardening them so as to be quite unsaleable. England was almost the only country in the civilised world where the use of antiseptics as such was wholly unrestrained and prosecutions had to be undertaken under Section 6 of the Sale of Foods and Drugs Act, on the ground that the sample "is not of the nature or quality" demanded, or under Section 2, that "the addition is injurious to health," and the defence always endeavoured to throw on the prosecution the onus of proving injury in the particular case, the quantity of adulterative matter found by the analyst, or the proportion requisite for the purpose in view. But while one man deemed 18 grains of boric acid to one pound of butter sufficient another put in 84 grains, and though the quantity consumed in one article of food might be productive of no ill effects it was quite possible that the aggregate dosage of several in daily use might be highly injurious, to say nothing of individual susceptibilities. So-called experts, mostly chemists ignorant of physiology, could always be had to give evidence for the defence, and it was safer that Section 6 only should be relied upon. Dr. Hill quoted the opinions of numerous authorities based on clinical observations or upon experiments on themselves and on dogs as to the effects of small and large doses of boric acid to show that it tended to interfere with nutrition, to increase excretion by the bowel and kidney, to induce catarrhal and inflammatory conditions and cutaneous eruptions, and to depress the heart's action to such an extent that fatal consequences had followed its use even in surgery. The action of salicylic acid on the heart and cerebral functions as well as on nitrogenous metabolism was well known, and its great value as a drug made its habitual use more evidently dangerous. Perhaps, however, the most serious aspect of the question at present was the effect of boric acid in milk upon infants whose sole or chief food was milk, and it was not improbable that much infantile diarrhœa might be due thereto. In Germany all antiseptics were illegal—boric acid in meat and milk especially—and their use was prohibited more or less strictly in France, Italy, Holland, and even in Spain and some States of both North and South America. In France, however, produce intended for exportation was exempt, and "Brittany butter" and the milk recently sent over from Normandy were highly charged with boric acid. There was no real justification for the use of chemical preservatives, but if they were not prohibited unconditionally some authoritative regulation was required, as would have been exercised by the proposed Board of Reference in the Bill introduced in 1897 by Mr. Kearley and other members of the House of Commons. Refrigeration, however, was a means of preserving all perishable articles of food which was absolutely free from objection and applicable to all alike.

Mr. TUBB THOMAS said that boric acid was employed in large amounts for preserving in an apparently fresh state the fish imported from Sweden and Norway.

Dr. WILLOUGHBY believed that the use of preservatives for milk was in London practically confined to the small retail dealers, enabling them to carry over to the next day the few gallons left unsold. The great companies, at any rate that with which he was connected, strictly prohibited the use of preservatives while insisting on effectual refrigeration by special apparatus.

Mr. CASSAL, as a public analyst, held, and always took up the position in court, that "if a substance were present in quantity sufficient to exert an antiseptic action it must *de facto* inhibit digestion, and therefore it must if of any use be harmful."

Dr. WOODFORDE, Dr. W. BOND, Dr. EDMUNDS, Dr. ALLAN, and others having spoken Dr. HILL replied.

Two resolutions (1) deprecating the use of chemical antiseptics in general, and (2) demanding that if they were permitted their nature and amount should be clearly stated were passed almost unanimously.

CHELSEA CLINICAL SOCIETY.

Tuberculosis.

A SPECIAL meeting of this society was held at the Jenner Institute of Preventive Medicine, Chelsea-gardens, S.W., on April 18th, the President, Mr. J. FOSTER PALMER, being in the chair. The subjects of discussion were the Recent Investigations relating to the Etiology, Prevention, and Treatment of Tuberculosis. Dr. AUSTIN E. COOPER, the honorary secretary, read the minutes of the last ordinary meeting which were then confirmed and the names of new members were read out.

The PRESIDENT in the course of a few introductory remarks touched upon the several aspects of tuberculosis. He said that the additions to our knowledge of this subject were, after all, confined principally to bacteriological research. The contagious nature of the tubercle and the

belief of the possibility of its prevention were generally recognised, but they must avoid regarding contagion as the sole reason of tuberculosis. He remarked that the open-air treatment was not new, for it had been recommended in 1864. Tuberculosis was, he thought, hereditary only in the same way as were diphtheria and typhoid fever. He asked, Could it be accepted as a bacteriological fact that cowflesh might be eaten with impunity if the milk was poisonous? In referring to the question of expectoration he thought there were two safe methods—the one to spit into the fire, the other on the ground. The sanatoria question was not yet fully worked out; to be consistent with our beliefs nearly half the population ought to be sent to sanatoria. Was a member of a family with a patch of tubercle in one lung to be treated as a leper? The nature and biological qualities of the tubercle bacillus and the means of distinguishing it would be brought before them. Was the Timothy-grass bacillus a modification of the tubercle bacillus? Lastly, the surgical aspect of the question would be brought before them; he thought they should see excision of the lung as certainly as they removed toothache by extraction of the teeth.

Professor G. SIMS WOODHEAD said he wished to take up one or two special points concerning the pathology of tuberculosis as there was now a practical agreement as to the main points in its etiology. In this subject, more than in any other, laboratory experiment had confirmed in a most marked degree clinical observation. He should attempt to place before them some of the more important clinical features of pulmonary tuberculosis and indicate how the condition there met with agreed with experimental tuberculosis and with the disease as seen in different animals. He made a number of sketches of the different forms of pulmonary tuberculosis and pointed out the relation of consolidated patches and cavities to the glands of the root of the lung. He gave examples of extension of tubercle to the lung: (1) from the glands; (2) from the abdominal cavity, especially when the base of the lung was adherent to the diaphragm and the diaphragm to the liver; (3) from the thickened pleura on the wall of the chest and in connexion with thickened pleura at the apex. He also showed how in cases of acute pleurisy tuberculosis often appeared to come in as a purely secondary condition. He then described the results of feeding experiments on the pig, showing how tubercle of the bacillus could enter by the tonsil, which it might or might not attack directly, but having made its way to this point it followed the course of the glands of the neck down to the apex of the lung and also down to the root of the lung; and he thought that this channel of invasion was now coming to be recognised at its true value. He showed how tuberculosis might be accelerated where there was imperfect expansion due to adhesion, by alteration in the lymphatic supply, and similar alterations. He then described the different kinds of tubercle met with in different animals and insisted very strongly on the fact that it was by no means the most resistant animals which contained fewest tubercle bacilli, as here they had to do with a question of dosage and the overcoming of resistance; where there was a large dose and where the resistance was eventually overcome, even though it had been initially great, there must be a large number of tubercle bacilli found. He also spoke of the necessity of absolutely cutting out tuberculous cattle from a dairy supply, whilst he believed that the best and most economical plan would be to kill off tuberculous cattle before they got any thinner. He looked upon tuberculosis as an exceedingly curable disease; he mentioned that tuberculin in some form or other might still be useful in the treatment of tuberculosis, especially when, as the President had indicated, they were able to cut out or get at and expose thoroughly tuberculous lesions. He did not think he was too hopeful when he said that he quite expected that in the next 10 or 15 years they should see an enormous reduction in the mortality from tuberculosis.

Dr. SIDNEY MARTIN said that he should take up a few points especially as indicating how the study of pathology had been of great help in the elucidation of the clinical features of the disease. It was a subject the history of which was enshrouded in the greatest obscurity, caused, he was sorry to say, in many instances by the imagination of the medical profession itself. It was only since 1882 that any clear idea of what tuberculosis was had been obtained. He proposed to deal with modes of invasion of tuberculosis through the mouth, the tonsils, the intestine, by means of the lungs or skin, through tuberculous meningitis, and tuberculosis of the bones and joints. In his work for the Royal Commission on Tuberculosis on the Infectivity of Meat and Milk he had learnt some lessons of the nature of infection which had been of the greatest value to him in comparing the tuberculous lesions of milch cows with those which occurred in human beings. The invasion of the body by an infective disease depended, he thought, on several factors: (1) susceptibility of the animal to the disease; (2) dosage of a poison; and (3) virulence of the bacillus. In experimenting by feeding, by inhalation, or by inoculation one great result which he thought was obtained was that there might be direct local infection and infection at a distance. One animal, for instance, would have a local lesion in the intestinal tract and in the other there would be none, but a lesion in one or more of the mesenteric glands. It appeared then that the tubercle bacillus could pass through the intestinal mucous membrane without producing a local lesion and this result depended on the dose of the virus. He believed that certain distant foci of tubercle were the result of accidental infection by the blood-stream; this might sometimes also be the case in tuberculous meningitis and in tuberculous bones. He then dealt with the localisation of the disease and pointed out that retrograde lesions were frequently observed at the same time that advance was going on in other parts of the body. Then they had cases which appeared to get well from start to finish. The question of the infectivity of the retrograde tubercle was very important not only pathologically but clinically and he mentioned the calcareous caseous nodules met with at the apex of the lung and in the lymphatic glands; these were found where there was no spread of the tubercle—frequently in cases of carcinoma and cancer. He had never seen active tubercle occur in a case of carcinoma. Tubercle was, he thought, incompatible with cancer, speaking as a rule. Although he believed that the old lesions were usually more infective he should like to point out that Fowler had traced the relation between calcareous caseous lesions and general tuberculosis. He then referred to the great tendency to healing which usually existed in cases of tuberculosis in the human subject as compared with that in the lower animals, to the localisation and encapsuling of the lesion. It must always be remembered that tuberculosis was never produced by anything but the tubercle bacillus and one of the great means of getting rid of tuberculosis was to get rid of tuberculous foci, especially when these were in animals; other foci in air, &c., were comparatively unimportant. As regards meat and milk he thought the milk question was a simple one, but as regards meat they were met by two different schools—"all" and "none." He believed that in most cases infection was carried through the dressing of meat. In only a few cases had he come across any tubercle in the meat itself, but the danger from "dressing" was a very appreciable one.

Mr. WATSON CHEYNE, who was unable to be present, sent a paper of which the following is an abstract. In surgical work tuberculosis was met with in a variety of forms and situations and the mode of access of the bacilli and the changes which they produced were of great importance from the point of view of treatment. In operating on a tuberculous affection it was a point of the greatest importance whether one was likely to remove the whole disease or only to take away one local manifestation. Many cases undoubtedly arose from direct infection as in the skin and in cases of intestinal tuberculosis and glandular disease. Mr. Watson Cheyne then referred to Klebs's experiments upon animals and said that the conditions were similar in the human subject. In cases of diseased cervical glands lesion was seldom found at the point of entrance in the throat, though probably the bacilli entered in that situation. It must be remembered that the infection spreads rapidly to adjacent glands and it was more satisfactory in removing the diseased glands to take away also all the surrounding fat. In tuberculosis of the more distant parts the bacilli probably had reached the part through the blood-stream and then the question of the primary or secondary origin of the disease was a much more difficult one. There were a number of points which precluded the embolic origin of joint affections as a common mode of origin. One of these points was the marked predisposition to tuberculous disease shown by different joints. Whence did the bacilli in the blood-stream come? They must either have got into the blood from outside or have come from some pre-existing deposit in the body, such as a cheesy gland. In the

former case the disease of the joint would be primary and removal of the local deposit would cure the patient; in the latter disease would be secondary and cure would be doubtful because fresh lesions might arise from the same source that supplied the bacilli in the first instance. Pathological research had shown that in many cases of scrofulous diseases of the joint there was a deposit elsewhere which might have preceded the joint disease, but it did not follow that the bacilli which set up the joint trouble were necessarily derived from the former source. Mr. Watson Cheyne thought they were in many cases but not always. This view fell to the ground in face of the fact that in several instances no such deposits had been found and one must admit therefore that many of the deeper-seated tuberculous deposits were primary in origin; where these arose secondarily to deposits elsewhere he thought it was a case of multiple tuberculosis.

Some slides were then shown which were lent by Professor SIMS WOODHEAD and Mr. WATSON CHEYNE.—The following members took part in the discussion which followed: Sir C. GAGE BROWN, Dr. MITCHELL SMITH, Dr. F. R. WALTERS, and Dr. GIBBES.—Professor SIMS WOODHEAD replied at some length to the questions put to him.—The proceedings terminated with a hearty vote of thanks to those who had so kindly addressed the meeting.

LIVERPOOL MEDICAL INSTITUTION.

Prurigo Ferox.—Pylorectomy.—Pyloroplasty.—Foreign Bodies in the Eye.—Suppurative Peritonitis.

A MEETING of this society was held on April 13th, Dr W. MACFIE CAMPBELL, the President, being in the chair.

Dr. BARENDT showed a lad, aged 13 years, suffering from Prurigo Ferox. The "eczematisation" of the skin due to incessant scratching, with prurigo efflorescences glimmering through and in the vicinity of this secondary eruption, was most marked on the shins and forearms. The thighs, buttocks, and arms, with the exception of the internal aspects, displayed red ridges and configured areas of thickened integument powdered with material like asbestos. The prurigo buboes were well marked in the inguinal and axillary regions and the skin where free from rash was harsh to the touch. The family history shed no light on this incurable affection and treatment was only palliative.

Mr. RUSHTON PARKER showed a man, aged 48 years, upon whom he had performed Pylorectomy on Jan. 16th. Gastric troubles had existed for five or six years and recently pain and vomiting after food had reduced the patient to a state of emaciation. At the operation a hard tumour was found in the posterior wall near the pylorus and excision was performed. The duodenum was then attached to the stomach by continuous silk stitches, one set for the mucous membrane, the other for the peritoneum, and the remaining gap in the stomach was closed by attaching its sides in the same fashion. The patient made a good recovery within a few weeks, was able to eat ordinary food, and was still in good health on April 13th. The growth showed no indication of carcinoma, but was obviously of syphilitic origin as evidenced by small gummata, endarteritis, and cellular infiltration.

Mr. RUSHTON PARKER also showed a man, aged 21 years, upon whom he had performed Pyloroplasty on Jan. 23rd. At the operation the pylorus was found to be narrowed to three-eighths of an inch in diameter outside. This was opened and a small circular ulcer was found inside the stomach. Pyloroplasty was performed over a Mayo Robson's decalcified bone button and the diameter of the pylorus increased to one and a half inches outside. The patient made a good recovery, in a month or five weeks ate ordinary meat diet, and on April 13th he was in good health.

Dr. GROSSMANN described a Method of Localising Foreign Bodies in the Eye by Means of the X Rays which he had employed in preference to Mr. M. Davidson's stereoscopic method.[1] He utilised the movements of the eye for obtaining the parallax of the shadow of the foreign body, the Crookes's tube, the patient's head, and the sensitive plate retaining the same position in two successive exposures.

Mr. R. W. MURRAY showed a child upon whom he had operated for General Suppurative Peritonitis associated with a gangrenous appendix. The patient, a boy, aged nine years, was first seen by Mr. Murray last September; he had been seriously ill for five days with abdominal pain, constipation, and continuous vomiting. The abdomen was much distended, tender, and tympanitic. On opening the abdomen the intestines were found to be bathed in pus and bubbles of gas came from the right iliac fossa. The median incision was enlarged, the intestines were turned out of the abdominal cavity, and the appendix which was gangrenous and perforated was excised. The abdomen was then well washed with warm boric lotion, the distended intestines after being cleansed were with some difficulty returned, and the wound was closed except at the lower part where a drain was inserted. After an anxious convalescence the boy ultimately made a good recovery.—Mr. W. MITCHELL BANKS said that by far the commonest cause of suppurative peritonitis was in the first instance an appendicitis or a perityphlitis. He considered the routine use of opiates to be harmful to the patient and distracting to the surgeon. As the majority of cases occurred in children it might be possible to have in the operating theatre a tin bath beside the table at a height convenient to the surgeon. If the bath were filled with a hot salt solution and the child put into it the abdomen might be opened in it and washed out under water. This was a theoretical proposition, but perhaps it might yet be tried.—Dr. E. T. DAVIES, Dr. HUMPHREYS, Dr. NATHAN RAW, Dr. BARR, Dr. GRÜNBAUM, Mr. RUSHTON PARKER, and Mr. THELWALL THOMAS also spoke and Mr. MURRAY replied.

[1] Brit. Med. Jour., Jan. 1st, 1898.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Abscess in the Tibia.—Hemiplegia in Enteric Fever.—Multiple Abscess of the Liver and Carcinoma of the Gall-bladder.—Blood-cast of the Nares.

A MEETING of this section was held on March 24th, Professor E. H. BENNETT, President of the Academy, being in the chair.

Mr. H. G. CROLY communicated several cases of Brodie's Chronic Circumscribed Abscess in the Tibia and exhibited portions of bone removed by a trephine; the bones were much thickened and diseased. Case 1 occurred in the lower end of the tibia of a young man who suffered from severe pain confined to a small spot about four inches above the ankle-joint. All treatment constitutional and local failed to give relief. Mr. Croly trephined the tibia at the most painful part and a small quantity of pus escaped. The patient felt immediate relief and made a rapid recovery. Case 2 was that of a young woman who suffered from pain at the junction of the middle and lower third of the tibia for about 16 years. The pain at times was excruciating. All treatment having failed amputation was proposed and refused, but on Mr. Croly trephining the tibia a small quantity of pus escaped and the patient made a perfect recovery. Case 3 was that of a young man who suffered for 10 years from very severe pain in the lower third of the right tibia. Mr. Croly trephined and about two drachms of healthy pus escaped as the portion of bone was being removed. The wound healed rapidly and the patient got immediate and permanent relief. In Case 4 the patient was a young girl who suffered for over three years from severe and constant pain in the upper third of the right tibia. Mr. Croly trephined and she got instant relief.—The cases were discussed by the PRESIDENT, Dr. T. MYLES, Dr. KNOTT, and Mr. T. E. GORDON.

Dr. J. W. MOORE reported a case of Enteric Fever fatal through Embolic Hemiplegia. The patient was a woman, aged 29 years, who progressed favourably until the twenty-seventh day when a fresh rise of temperature, pain in the left side, and a choking sensation marked the occurrence of hæmorrhagic infarction in the spleen. 11 days later a violent rigor and rapid rise of temperature to 105·6° F. ushered in an attack of right hemiplegia with complete aphasia. The patient died on the forty-third day. The left middle cerebral artery was blocked by a firm embolus. The spleen was the seat of several hæmorrhagic infarctions. The terminal few inches of the ileum showed frequent excavations formed by the previous detachment of numerous typhoid ulcers.—Dr. E. J. MCWEENEY and Dr. R. T. SMITH discussed the case.

Dr. E. J. McWEENEY showed the Liver of a woman, aged nearly 70 years, who suffered from severe and persistent jaundice for several months before death and was thought to have cancer of the liver. Post mortem the organ was found to be not much enlarged (it weighed 60 ounces) and was studded on the surface and throughout with hundreds of small abscesses, varying in size from a pin's head to a hazel nut, and containing a greenish pus, thick and inodorous. Of gall-bladder there was no trace, its position being occupied by a solid white nodule of about the size of a walnut, to which the duodenum was firmly adherent. On microscopic examination this proved to have the structure of adeno-carcinoma and a gradual transition from normal bile-duct to carcinoma structure could be distinctly traced in the sections. The abscesses were not demonstrably contained in the bile-ducts or associated with the portal vein. They contained two varieties of bacillus coli distinguished by their appearance on gelatin plates and on potato. Both were highly virulent for rabbits and produced abundance of indol. The necropsy was made a few hours after death so that post-mortem immigration need not be assumed.

Dr. N. FALKINER reported the occurrence of a Peculiar Clot in a Case of Epistaxis. The patient was a woman, aged 76 years. On March 27th, 1898, blood commenced to flow from her mouth and nose and continued intermittingly until March 29th, when with a severe fit of coughing, accompanied by a feeling of suffocation, the clot was coughed up. The bleeding ceased, but the patient died on April 11th. The clot was evidently a cast of the posterior nares, with a process about eight inches in length, which probably extended down into the œsophagus; it was composed entirely of blood-clot and contained no organised tissue.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY. — A meeting of this society was held on March 29th, Mr. Alex. Miller, President, being in the chair.—Dr. Malcolm Black read a paper on Three Years' Experience of Induction of Premature Labour for Contracted Pelvis in the Glasgow Maternity Hospital. Dr. Black first referred to the method employed, in all cases by the introduction of a bougie. He then described how the patient was prepared and how the bougie was sterilised by soaking for four hours in carbolic one in 20. The greater part of the paper was taken up in describing the cases which had occurred under his care and that of his colleagues from Nov. 15th, 1895, until Nov. 15th, 1898. There were 50 cases in all and Dr. Black grouped them as follows. Group 1. Two cases where the mother was lost—the only maternal fatalities; one died from rupture of the uterus, and the other from severe hæmorrhage resulting from the bursting of a Champetier de Ribes bag. The child in the former case was dead; in the latter case the child was alive. Group 2. Five cases where the labour had to be completed by craniotomy. Group 3. 13 cases where the child was born dead or died immediately after delivery. Group 4. 10 cases where the child was born alive but died before leaving the hospital. Group 5. 20 cases where the child was born alive and left the hospital alive. Finally Dr. Black pointed out how he thought the mortality might be lessened.—Dr. Carstairs Douglas read an account of a fatal case of Acute Yellow Atrophy of the Liver, verified post mortem. The patient, aged 35 years, was a V para in the eighth month of pregnancy. For ten days she had symptoms of catarrhal jaundice. After that she fell into a stupor which continued for 24 hours when she gave birth to a child without giving any indication that she was in labour. She could not be roused. The temperature was 97° F. There were no convulsions. Scattered over the legs were subcutaneous hæmorrhages. Liver dulness (relative) could only be made out between the fourth and sixth ribs and there was no absolute dulness at all. The urine was of the colour of pale porter and contained bile, but no sugar, albumin, or blood. Microscopically imperfect leucin crystals were found, but no tyrosin. The uterine cavity was explored and was found to be quite empty. The bowels were thoroughly moved with croton oil and fomentations of digitalis were applied over the kidneys. Gradually the coma became more profound, the icterus more marked, the pulse feebler, and the patient expired four days after the onset of the serious symptoms. The necropsy revealed great diminution in the size of the liver—it weighed only 27½ ounces. The inferior surface of both lobes was yellow, but the upper and posterior surfaces were dull red with a slight yellow mottling. On section they were canary yellow in colour. Dr. Douglas in conclusion discussed the etiology of the disease.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 30th, Dr. Hunt, Vice-President, being in the chair.—Dr. Arthur Hall showed a case of Linear Ichthyosis Hystrix.—Mr. Simeon Snell introduced two cases: 1. Recurrent Third Nerve Palsy associated with Migraine in a woman aged 23 years. The patient was first shown before the society in 1884 and the case was reported in the Transactions of the Ophthalmological Society, 1885. The attacks of severe palsy and sickness had recurred every three or four months, but recovery from the associated third nerve palsy had become increasingly imperfect. 2. Embolism of the Central Artery of the Retina in a young woman.—Dr. Sorley showed a case of Muscular Atrophy from Polyneuritis following Influenza.—Mr. Archibald Cuff exhibited and made remarks on—(1) a case of Hemi-hypertrophy; and (2) a specimen of Cerebellar Tumour.—Dr. J. W. Martin communicated the notes of a case of Cæsarean Section. The patient was a primipara, aged 23 years, a deformed dwarf. From measurements carefully taken before the patient left hospital it was found that the distances were: between the crests of the ilia, 10¼ inches; between the anterior superior spines, 10 inches; antero-posterior diameter, six inches; internal conjugate (with callipers), one inch; thickness of the sacrum (with callipers), three and five-eighths inches. The patient was admitted into the Jessop Hospital for Women at 2.30 A.M. on April 13th, 1898, and was in labour at the time. The deformed condition of the pelvis was at once noticed by the house surgeon, Mr. Sidney Barber, and the necessity for operation was recognised. After consultation with the other members of the staff Dr. Martin performed a Cæsarean section successfully, the lives of both mother and child being saved, the operation lasting 35 minutes. There was a smart gush of hæmorrhage after the patient was put to bed; this seemed to be controlled by a subcutaneous injection of $\frac{1}{10}$th of a grain of citrate of ergotin. There were some bronchial trouble and rise of temperature for four days after operation, but both speedily subsided and the patient made an excellent recovery, being discharged on May 7th, 1898.—Mr. Richard Favell related a case of Vaginal Extirpation of the Gravid Uterus.—Dr. Hunt, Dr. Arthur Hall, Dr. Hargreaves, Dr. Gwynne, Dr. Burgess, Dr. Keeling, Mr. Snell, Mr. Richard Favell, Dr. J. W. Martin, Dr. Sinclair White, and Mr. Sidney Barber made remarks.

ULSTER MEDICAL SOCIETY.—The usual monthly meeting of this society was held on April 13th in the Museum, Belfast, the President, Dr. Nelson, being in the chair.—Dr. T. Sinclair Kirk showed a man whom he had successfully treated by operation for a Subphrenic Abscess.—Dr. Calwell showed: (1) A man the subject of Transposition of the Viscera; (2) a case of Tertiary Affection of the Lips in a woman; (3) a case of Severe Prurigo in a young man; and (4) a woman with an Eruption of a Peculiar Ringed Nature on the left side of the face not of a tineal nature.—Lieutenant-Colonel Moorhead, I.M.S., read a paper on Abscess of the Liver in which he gave a very full account of the etiology, clinical history, diagnosis, and treatment of the disease as seen by him during his residence in India, as well as drawn from his own personal experience, he having suffered from abscess of the liver while in that country.—Professor Byers complimented Lieutenant-Colonel Moorhead on the very interesting paper which he had read and said it was very gratifying to find a former distinguished member of the Belfast Medical School who was now resident in their city giving them such an elaborate *résumé* of a disease of which he had such a unique experience. They all knew how in recent years, owing to the remarkable expansion of the empire, a knowledge of tropical diseases was becoming of the greatest importance and this had been emphasised by the Colonial Secretary who was anxious that at the various medical schools the subject should be taught. Hence the value of Lieutenant-Colonel Moorhead's paper. Professor Byers then related several cases which he had under his care.—The President who had spent a considerable portion of his professional life in India spoke of the great value of the paper.—Dr. Calwell read a paper on an Unnoticed Cause of Dyspepsia. Having spoken of the ordinary forms of dyspepsia Dr. Calwell said it was too often forgotten that affections of the peritoneal coat

of the stomach, in the form of adhesions, the result of gastric ulcer, &c., might cause dyspeptic symptoms through the movements of that viscus being limited and by pressure. He discussed the symptoms and the medical and surgical treatment.—An interesting discussion followed in which Dr. Kevin, Dr. A. P. B. Moore, Dr. Dempsey, Dr. Johnston, Dr. T. Sinclair Kirk, Mr. Robert Campbell, Dr. Fullerton, and Professor Byers took part.—Dr. Calwell replied.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held on April 7th in the University College, Dundee, Dr. McGillivray being in the chair.—Dr. McGillivray showed a patient with Double Upward Coloboma and a patient suffering from well-marked Follicular Conjunctivitis. Two Roentgen ray photographs of a Compound Comminuted Fracture of the First Phalanx of the Right Forefinger in a man who refused to allow amputation were shown by Dr. Pirie. The latter of the two photographs showed a false joint forming and the patient had now fair movement.—Professor Kynoch showed a Papillomatous Cyst of the Ovary removed by Posterior Colpotomy and he emphasised the case with which small tumours could be removed by this method.—Dr. Foggie read notes of a case of Acute Yellow Atrophy occurring in a girl aged 14 years. After a period of indefinite ill-health gastric catarrh and jaundice had set in and they had lasted for 14 days with occasional hæmatemesis. Marked depression followed, which was succeeded by sudden and rapidly fatal cerebral symptoms in which an initial delirium had given place to coma and tetanic convulsions. A petechial eruption was present both before and after the onset of the jaundice. No diminution in the liver dulness could be determined. Although a post-mortem examination was not allowed the diagnosis of acute yellow atrophy seemed to be warranted. He quoted the view recently supported by Dr. W. Hunter of the condition being a rare form of malignant jaundice of obscure infective nature due to an organic poison probably found in the intestine and acting on the liver after absorption and he thought that this view would assist in the explanation of the great clinical variation in the reported cases.—Mr. Greig then made a further communication on Two Years' Experience in the Surgical Outpatient Room of the Royal Infirmary, in the course of which he read some interesting notes upon the occurrence of hernia. The cases numbered exactly 100; of these 88 were inguinal, 39 of the patients being between the ages of one and 10 years. Mr. Greig's statistics showed the cases of inguinal hernia to be four times as common on the right as on the left side. Of 33 cases in males 28 of the patients had phimosis.

FOLKESTONE MEDICAL SOCIETY.—A meeting of this society was held on April 5th, Dr. Tyson, President, being in the chair.—Mr. Yunge-Bateman, medical officer of health, communicated to the society a series of facts regarding Tuberculosis and Recommendations for its Prevention which he is bringing before the local authority with a view of inducing them to take action in the matter. Among other important suggestions he included distribution of leaflets by the sanitary authority to educate the public on the nature of tuberculosis, voluntary notification, and precautionary measures, such as disinfection of rooms in which a phthisical patient had lived. Milk should be systematically examined for pathological signs and bacteriological diagnosis should be undertaken at the expense of the local authority. In contracts for milk supplies a clause requiring freedom from tuberculous taint should be inserted. Powers should be obtained from Parliament to provide for the examination of all cows supplying milk and inspection of dairies and cowsheds, whether within or without the boundaries, and to prohibit the sale of suspected samples.—A discussion took place in which Mr. Barrett, Mr. Dobbs, Dr. Ewart, Dr. Larking, Mr. Powell, Dr. Sworder, and Dr. Tyson joined.

BRISTOL EYE DISPENSARY.—The annual meeting of this institution was held on April 11th, under the presidency of Mr. P. J. Worsley. The report showed that 1710 patients had been treated during the year, being upwards of 100 more than in 1897. During the 87 years' existence of this institution 141,000 patients have been treated. The financial statement showed that a small favourable balance remained.

Reviews and Notices of Books.

A Text-book of Mental Diseases: with Special Reference to the Pathological Aspects of Insanity. By W. BEVAN LEWIS, L.R.C.P. Lond., M.R.C.S. Eng. Second edition, thoroughly revised, enlarged, and in part re-written. With Illustrations, Charts, and 26 Lithographed Plates. London: Charles Griffin and Co., Limited. 1899. Large 8vo. Pp. 609. Price 30*s*.

TEN years ago the first edition of this work made its appearance. It was practically the first attempt at the time to present in the field of English psychological medicine a *résumé* of our knowledge of morbid changes in the brains of the insane, and founded as it was on pathological observations—largely the writer's own work—and illustrated with exceptionally good plates it attracted considerable attention. The existing text-books at the time were notably defective in the very field of pathological anatomy on which Mr. Bevan Lewis could write with authority and ability, and his book when it appeared was felt to supplement much that was wanting in the treatises of Griesinger, Bucknill, and Tuke, and the later lectures of Sankey, Blandford, and Clouston.

The ten years which have elapsed since the first appearance of this book have been characterised by great advances along the whole line of neurology and psychology, so that in some directions we should have expected more modification of the original issue. The work is arranged in three sections: an Anatomical section (140 pages), a Clinical section (340 pages); and a Pathological section (110 pages). The anatomical section, written mainly after Meynert, is involved and obscure in phraseology, while it would not be difficult to indicate omissions which should not have occurred. For example, the description of the optic thalamus and regio subthalamica takes no account of the more recent discoveries of von Monakow (easily accessible in the atlases of Allen Starr or Flatau); the connexions of the cerebellum and its peduncles with other parts of the cerebro-spinal system, as shown by the researches of Marchi, of Risien Russell, and of Turner and Ferrier, are not referred to; the pathways of the lemniscus and of its elements are not given correctly or connectedly; and the splendid work of Ramon y Cajal on the medulla, pons, and basal ganglia, which has added a wealth of knowledge, is not laid under contribution. The remarks on the physiology of the brain at the conclusion of this section are interesting but all too brief.

The clinical section is the outcome of large experience and observation, while the author's scheme of presentation is simple and serviceable from a psychological standpoint. This section opens with a discussion on the psychology and genesis of mental depression and of delusions which is continued in later pages in reference to states of exaltation, of monomania, and of their hallucinatory and delusional accompaniments. It constitutes a piece of close, elaborate reasoning, clear in places, but obviously trammelled by difficulties of exposition natural to a subject of this kind. It shows throughout the influence of Herbert Spencer and of Griesinger, and to a less degree that of Hughlings Jackson; the writing is clever, and the philosophical standpoint is mainly that of the common-sense and associationist school. Stupor and states of mental exaltation receive adequate discussion, but here we might have expected some account of the "hallucinatory delirium" of Mendel—the *confusion mentale primitive* which Chaslin has so fully discussed and described. Concerning delusional states, the false connexions with self (Beziehungswahn) which the patient finds in so many different experiences, the distortions of memory, the distinction between presently-active and

residual morbid processes, and the partial transformation (or dislocation) of elements of the ego are not adequately presented. We cannot help thinking also that "irritation of subject-consciousness" and "depression of object-consciousness" have to bear too heavy a burden in these pages.

In dealing with epileptic, alcoholic, and general paralytic insanity we find Mr. Bevan Lewis treading on sure ground, These are all treated with that ability and wealth of detail which the first edition gave us. Pupillary conditions are given with great minuteness. Regarding puerperal insanity we expected to find some definite recognition or description of the asthenic mental confusion (subacute delirium) of puerperal toxic origin now increasingly recognised and differentiated from that vague and chaotic "puerperal mania" which had served its purpose so well in the past. There are judicious remarks on climacteric and senile insanities, and a chapter of 25 pages—a welcome addition to the book—deals in a general way with Treatment, Mental Nursing, and Therapeutics.

The last section treats of Cerebral Pathological Anatomy and discusses the results of morbid conditions in the spinal cord and brain. A portion of this deals with macroscopic observations mainly, and constitutes a statistical document of value. The more strictly microscopic part deals with the finer morbid changes and is illustrated by a number of plates which formed such a marked feature in the first edition and which must still retain their value. But vast changes have taken place in the past decade in psychology and pathology alike. This book is apparently uninfluenced by this for it presents to us the same pathology as of old illustrated by the same figures.

We have not been able to give this book unreserved praise, for the author's performance is unequal, the decided merit and originality of certain parts being somewhat counterbalanced by the omissions to which we have alluded and by the absence of endeavour to present the latest views. But when all is said it must be remembered that Mr. Bevan Lewis has written the best treatise in English upon his subject, and when an author has done this the blemishes in his work must not be too severely regarded.

Die Wanderniere: ein Beitrag zur Pathologie des intra-abdominalen Gleichgewichtes. Experimentell-anatomische Studien von Dr. Med. M. M. VOLKOW und S. N. DELITZIN. (*Moveable Kidney: a Contribution to the Pathology of the Intra-abdominal Equilibrium.* Experimental Anatomical Studies by Drs. M. M. VOLKOW and S. N. DELITZIN.) Illustrated. Berlin: August Hirschwald. 1899. Pp. 350. Price 4 marks.

THE title of this book fully explains its scope. It is a very elaborate treatise on the condition known as "moveable kidney" considered mainly from an anatomical point of view. The amount of work which must have been necessary to complete the investigation can only be designated as enormous and says much for the energy and perseverance of the authors. The work is divided into three parts.

Part I. opens with a chapter on the statistics which have hitherto been brought forward as to the frequency of the condition of "moveable" or "floating" kidney and the various theories of its causation are discussed; then follow chapters on the normal topographical anatomy of the kidney and methods of examination. The description is most complete, but for the ordinary reader rather too prolonged, although to anybody who wishes to make a special study of this subject it will doubtless prove valuable. Especially good is the chapter on the normal provisions which exist for holding the kidney in its place; the disposition of the peritoneum and its so-called ligaments and the arrangement of the fascia are minutely detailed. The anatomical investigations on the dead body have been carried out with great thoroughness. The kinematometer was extensively employed and yielded good results.

Part II. deals mainly with the influences which various anatomical conditions may exert on the moveability of the kidney: as, for instance, the influence which the position of the intestines may have, including the question of enteroptosis; the changes which may be effected by the weight o the liver and of the spleen; the possible alterations which may follow dilatation of the stomach; and, besides, particular attention is directed to the anatomical variations in the renal vessels and ureters.

Part III. consists of numerous diagrams, very well executed, explanatory of anatomical facts mentioned in the text.

The work done by the authors has undoubtedly added considerably to our knowledge of the anatomy of the kidney, especially to the deviations from the normal which have been included under the term of "moveable kidney."

The Cambridge Natural History. Vol. IX.: Birds. By A. H. EVANS, M.A. London: Macmillan and Co. 1899.

IN his preface the author states the object and scope of this work. He aims at supplying in some 600 pages short descriptions of the majority of the forms of bird life which may be met with both in our own islands and in foreign parts. He hopes that the work may be of real use not only to the tyro but also to the traveller or resident abroad who may be interested in the subject but who has not the opportunity of consulting the works of specialists. That there is a real need of such a work, at the same time concise and comprehensive, we cordially agree, and it is obvious that the chief difficulty with which the author has had to contend is not so much what he should say as what he should leave unsaid.

The work commences with a scheme of classification which occupies six pages and in which the lines laid down by Gadow in Bronn's Thierreichs are mainly followed. After the name of each sub-order, family, &c., the page on which its description may be met with is given, and this we found to be of great service in our perusal of the book. A short introductory chapter deals with such subjects as feathers, the skeleton, classification, geographical distribution, migration, &c., and ends with a terminology of the external parts of a bird sufficiently full to enable an intelligent observer to describe any new variety, or supposed new variety, which may fall into his hands. Chapter II. commences the systematic description of the various divisions of birds, beginning with Archæopteryx, the only known representative of the sub-class Archæornithes, all other birds being included in the Neornithes. The general plan adopted is to take the orders one by one and to mention the sub-orders and families included in them. The families are then treated of and a general account of the habits and external anatomy of their component genera is given. Finally, the more interesting and more commonly met with genera and species are dealt with in some detail. The author is not an anatomist, and being aware that in the space at his disposal much about birds must remain unsaid he has, perhaps wisely, determined to devote himself to saying that on which he is most competent to speak. We fear, however, that the reader of this book would hardly be inclined to credit anatomy with any great share in pointing out the real affinities of birds or in confirming the results which have already been arrived at by a study of the external parts. We think that much recent anatomical work might with

advantage have been briefly noticed; but however this may be the fact remains that Mr. Evans has furnished us with a most handy and useful reference work on the external appearances and habits of birds and he has been wise enough to see the value of supplementing his descriptions with a good number of illustrations. There are altogether 144 of these and most of them are specially drawn for this work. We have compared many of them with living birds and generally regard them as accurate and clear. Some, however, we do not greatly admire and this is especially the case with the emu on p. 37. Price 15*s*.

Dictionary of National Biography. Edited by SIDNEY LEE. Vol. lvi., Teach—Tollet. London: Smith, Elder, and Co. 1898. Pp. 453. Price 15*s*.

LITERATURE is well represented in this volume by Alfred Tennyson, James Thomson, and W. M. Thackeray. Tennyson was born in 1809 at Somersby Rectory, in Lincolnshire, became Poet-laureate in 1850, received a peerage in 1884, and died in 1892. The biographer (Rev. Canon Ainger) says of him that "in all that constitutes a consummate lyrical artist Tennyson could hardly give further proof of his quality." James Thomson was born in 1700 at Ednam in Roxburghshire. His work, "The Seasons," the first complete edition of which appeared in 1730, is described as "inaugurating a new era in English poetry." Thomson died at Richmond in 1748. The article on Thackeray (*b*. 1811, *d*. 1863) extends to 15 pages and is by Mr. Leslie Stephen, whose summing-up is that he was "one of the most characteristic writers of the first half of the Victorian period." Noted printers are commemorated in several biographies. Thomas Thomas (*b*. 1553, *d*. 1588) is mentioned as the first printer to Cambridge University; the writer, however, might have added that the first press was set up in the town in 1521 by John Siberch. Stereotyping was invented by William Ged, an Edinburgh goldsmith, about 1725, but he encountered great opposition and did not succeed in working his process to any considerable extent. Alexander Tilloch, born in Glasgow in 1759, applied himself to the same subject independently of Ged and invented a process which was brought to comparative perfection in 1782, and several small volumes were printed in this way by Andrew Foulis the younger, printer to the University of Glasgow.

The biographies of medical men are 29 in number. Honoratus Leigh Thomas was born in Flintshire in 1769, obtained the diploma of the Corporation of Surgeons in 1794, was an original member of the Royal College of Surgeons of England, and President in 1829 and 1838. He delivered the Hunterian Oration in 1827, was elected to the Fellowship on its foundation in 1843, and died in 1846. Noah Thomas graduated at Cambridge University as M.D. in 1753; was elected a Fellow of the Royal College of Physicians of London in 1757, and delivered the Gulstonian Lectures in 1759. He became physician-extraordinary to George III. in 1763 and physician-in-ordinary in 1775 and was knighted in that year. Sir Noah Thomas was born in Glamorganshire in 1720 and died at Bath in 1792. John Vaughan Thompson was born in 1779 and when a youth lived at Berwick-on-Tweed. In 1799 he became an assistant surgeon in the Army, saw much foreign service, and was made full surgeon in 1803. In 1830 he was appointed deputy inspector-general, and he died in 1847 at Sydney, where he went in charge of the convict medical establishment. Thompson has secured a permanent place in zoological literature through important discoveries relative to marine invertebrata. Theophilus Thompson was born at Islington in 1807, studied medicine at St. Bartholomew's Hospital, and graduated at Edinburgh as M.D. in 1830. He held the appointments of physician to the Northern Dispensary, lecturer at the Grosvenor-place School of Medicine, and physician to the Hospital for Consumption then (1847) situated in Marlborough-street. He was the first to introduce cod-liver oil into England. Theophilus Thompson was the author of treatises on influenza and pulmonary consumption and died in 1860. Dr. E. Symes Thompson is one of his sons. Anthony Todd Thomson was the son of a Member of the Council of the Province of Georgia and was born while his parents were on a visit to Edinburgh in 1778. The family went back to America, but after the peace they returned to Edinburgh. Thomson graduated at the university there as M.D. in 1799 and came to London in 1800. In 1828 he was elected the first Professor of Materia Medica and Therapeutics at the newly-founded London University (now University College) and in 1832 was made Professor of Medical Jurisprudence, an appointment which he held till his death in 1849. He was also a physician to the dispensary attached to University College, which has since become the University College Hospital. He took an active part in obtaining the Apothecaries Act of 1815 and assisted in founding the Pathological Society of London. He was the author of several standard treatises on materia medica and therapeutics and edited, among other works, an edition of James Thomson's "Seasons," which appeared in 1847. James Bruce Thomson was born in Ayrshire in 1810, took a surgical diploma in 1845, and was appointed first resident surgeon to the general prison at Perth in 1858. He published various papers in the *Edinburgh Medical Journal* and the *Journal of Mental Science* between 1860 and 1870, and was the first medical writer in Great Britain to investigate the mental and physical condition of criminals from the modern scientific point of view and to attempt a scientific estimate of the relations of crime with mental and physical disease. He showed that tuberculous disease was the chief ailment of the criminal class, diseases of the nervous system taking the next place in order of frequency, and he estimated that one in 47 of the criminal class was insane. He died in 1873. Robert Dundas Thomson was born in Berwickshire in 1810, studied medicine in Glasgow and Edinburgh, graduated as M.D. at Glasgow University in 1831, and settled as a physician in London about 1835. He was for some years lecturer on chemistry at St. Thomas's Hospital and when metropolitan medical officers of health were appointed in 1856 he was the successful candidate for Marylebone, afterwards becoming the first President of the Metropolitan Association of Medical Officers of Health. He was the author of a number of works relative chiefly to dietetics, chemistry, and public health. He was President of the British Meteorological Society in 1864 and died in that year. John Thomson, born in Paisley in 1765, studied medicine in Glasgow, Edinburgh, and London and became a Fellow of the Royal College of Surgeons of Edinburgh in 1793. In 1800 he was nominated a surgeon to the Edinburgh Royal Infirmary and almost immediately entered on the teaching of surgery. In 1805 he was made Professor of Surgery to the Royal College of Surgeons of Edinburgh and in 1806 he was appointed Professor of Military Surgery in the University. In 1808 he obtained the degree of M.D. from Aberdeen University (King's College). In 1832 he was appointed Professor of General Pathology in the University. He died in 1846, leaving two sons in the medical profession—William Thomson (born in 1802) and Allen Thomson (born in 1809). William Thomson became a Fellow of the Royal College of Surgeons of Edinburgh in 1825 and was admitted M.D. of Aberdeen University (Marischal College) in 1831. When his father's health failed he delivered for him several courses of lectures on general pathology, and, after applying unsuccessfully for the chair on his father's retirement, he was appointed in 1841 Professor of Practice of Physic in the University of

Glasgow, an appointment which he held till his death in 1852. Allen Thomson graduated as M.D., at Edinburgh University in 1830 and became a Fellow of the Royal College of Surgeons of Edinburgh in 1831. From 1831 to 1836 he lectured as an extra-academical teacher of physiology in association with William Sharpey who lectured on anatomy. He held in succession the appointments of Professor of Anatomy in Marischal College, Aberdeen, from 1839 to 1841, Professor of Physiology in Edinburgh University from 1842 to 1848, and Professor of Anatomy in Glasgow University from 1848 to 1877. He died in London in 1884 leaving one son, now Professor of Chemistry at King's College, London. His biographer (Mr. D'Arcy Power) says that he "was the first of the great biological teachers of this century in contrast to the natural historians of earlier times. Only less great than Huxley he differed from him in lack of polemical spirit. ..... He published no independent work, but his writings in scientific periodicals are numerous and are models of clearness of statement and skilful marshalling of facts." From 1859 to 1877 he represented the Universities of Glasgow and of St. Andrews jointly in the General Medical Council. He was President of the Biological Section of the British Association at the Edinburgh meeting in 1871 and in 1676 was elected President of the Association. John Thurnam, born near York in 1810, took the diploma of M.R.C.S. Eng. in 1834 and graduated as M.D. at the University of Aberdeen in 1846. After having been for some years medical superintendent of the Friends' Retreat in York he was appointed medical superintendent of the Wiltshire County Asylum in 1851 and remained in charge until his death in 1873. A zealous collector of antiquities and student of craniology, he wrote important memoirs on both subjects, and in 1865, with Dr. J. B. Davis, published a work in two volumes under the title "Crania Britannica." Charles Meymott Tidy, born in London in 1843, studied medicine at the London Hospital, becoming qualified as M.R.C.S. Eng. in 1864 and graduating as M.B. at the University of Aberdeen in 1866. In 1876 he was appointed Lecturer on Chemistry, Medical Jurisprudence, and Public Health at the London Hospital, and was afterwards called to the Bar and appointed Reader in Medical Jurisprudence to the Inns of Court. He was the author of a number of works dealing with legal medicine and chemical science. He died in 1892. Edward John Tilt (whose names have been transposed by the author of his biography) was born at Brighton in 1815 and commenced his medical education at St. George's Hospital and continued it in Paris, where he graduated as M.D. in 1839. He settled in London about 1850, devoting himself to midwifery and the diseases of women and was then appointed physician-accoucheur to the Farringdon General Dispensary and Lying-in Charity. In 1859 he took the diploma of M.R.C.P. Lond. He published several works on gynæcological subjects, was one of the original members of the Obstetrical Society of London and was elected president for 1874-75. He died in 1893. Robert Bentley Todd was born in Dublin in 1809, studied medicine in that city, and in 1831 took the diploma of L.R.C.S. Irel. Coming to London in 1831 he lectured for three sessions in the Aldersgate-street School of Medicine and graduated at Oxford University as M.D. in 1836, in which latter year he was reappointed to the newly established chair of physiology and general and morbid anatomy in King's College. He took a prominent part in establishing King's College Hospital, which was opened in 1840 in the unused poorhouse of St. Clement Danes, the present building having been begun in 1851. Todd was one of its two physicians until his death in 1860. His contributions to medical science were numerous, his great work being the "Cyclopædia of Anatomy and Physiology," the first umber of which was published in 1835 and the last in 1859.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on April 13th, the President, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., being in the chair.

The Jacksonian Committee reported that no dissertation on "Hydrophobia" had been received of sufficient merit to justify the award. On the recommendation of the same committee the Council decided that the subject for the Jacksonian Prize for 1900 should be "The Pathology, Diagnosis, and Treatment of the Diseases caused by, and connected with, Imperfect Descent of the Testicle." It was agreed that the dividends accruing from the Jacksonian Fund for the past year should be invested and added to the capital of the fund.

On the recommendation of the Committee of Management the following resolutions were agreed to:—

1. That the Royal University of Ireland should be recognised as one of the universities whose students are entitled to exemption from the first and second examinations of the Board.
2. That the following institutions be added to the list of institutions recognised for instruction in chemistry, physics, and practical chemistry: (*a*) Municipal Technical School, Manchester; (*b*) Bury Grammar School; (*c*) Swindon and North Wilts Technical School; and (*d*) Mathematical School, Rochester.
3. That the school of the late Mr. Thomas Cooke be recognised for the current year.
4. That in Part I. of the examination for the Diploma in Public Health the two examiners shall be authorised to nominate for approval by the Committee of Management an assistant who shall examine in bacteriology and who shall be subordinate to the examiners in that part. That a remuneration of 10 guineas per examination shall be paid to this assistant and that he be appointed for a year only but be eligible for re-appointment for four more years.
5. That the Birmingham and Midland Eye Hospital be added to the list of ophthalmic hospitals recognised by the Board.
6. That the course of laboratory instruction at the Middlesex Hospital School of Medicine be recognised for the Diploma in Public Health.

A report was received from the committee on the Celebration of the Centenary of the Charter of the College. The committee unanimously recommend that the centenary should be celebrated. With regard to the date of the celebration the committee would remind the Council that the charter of incorporation is dated March 22nd, 1800, and that the centenary therefore ought not to be celebrated before March 22nd in next year. It appears to the committee that, although in some respects the actual day of the year on which the charter was granted would be the most suitable date, March is not a desirable month, but they recommend that the celebration should take place before the termination of the College year on June 30th, 1900. The committee regard it as of cardinal importance to the success of the centenary that the Council should have power to confer diplomas of honorary Fellowship. In 1897 the Council were advised that a further charter would be necessary for this purpose and the committee now recommend that steps be taken with a view to obtaining a supplemental charter enabling the Council to confer these honorary diplomas on persons not being Members of the College, and that the legal advisers of the College be instructed to draft the necessary petition and charter. The report was adopted and it was decided that the Fellows and Members should be consulted at a special meeting on this question of applying for power to confer honorary diplomas.

The PRESIDENT reported that he had chosen Mr. H. G. Howse as the Bradshaw Lecturer for the ensuing collegiate year.

A letter was read from Mr. A. W. Fitz Roy, Clerk of the Privy Council, stating, by direction of the Lord President, in reference to his letter of March 9th that the intentions of Her Majesty's Government as regards direct representation at the proposed International Conference at Brussels respecting Venereal Diseases had been modified to the extent that representatives to be appointed by the War Office and India Office would act as delegates of Her Majesty's Government, but that this was without prejudice to the liberty of the Royal College of Surgeons of England to send representatives of its own if desirous of so doing.

The PRESIDENT stated that the vacancy on the Court of Examiners occasioned by the expiration on May 10th of Mr. J. McCarthy's period of office and the vacancy on the Board of Examiners in Dental Surgery due to Mr. McCarthy's resignation would be filled up at the ordinary Council meeting on May 11th.

The Council elected to the Fellowship the following Members of twenty years' standing: Mr. Thomas Frederick Chavasse of Birmingham and Mr. Frederic Shepard Dennis of New York.

New Inventions.

A NEW SURGICAL HAVERSACK.

THE foundation, so to say, of this haversack is a thin strip of Muntz metal, 36 inches in length and three and a quarter inches wide. The middle 14 inches form the bottom, and the two end portions, each 11 inches in length, bent at right angles to the middle length, form the ends. The metal is cased in leather and the whole is covered with tanned canvas which, extending also from end piece to end piece, forms the sides, and thus completes a rectangular satchel 14 inches by 11 inches by three and a quarter inches, open at the top. All the seams and corners are bound with calf; the two lateral edges along the mouth of the bag are

stiffened with a piece of split cane. A second similar satchel, but without the metal or cane, fits over the inner one like a sheath, closing the mouth of it and doubly protecting the sides and ends. This outer satchel projects slightly below the bottom of the inner one when the two are closed together in order to carry off rain. The haversack is fitted with a pair of strong but soft tanned webbing straps with incorrodible buckles; one to sling it by over the shoulder, the other to fasten round the waist like a belt so as to steady the whole. It is thoroughly waterproof so long as it is not actually immersed or inverted, and it has stood the test of rough usage in natives' hands during mountain travelling on foot in all weathers for 18 months without suffering in any respect. The contents may be varied at the will of the surgeon. Those which follow have been selected to suit the particular needs of practice among the natives of Fiji and are supplied to the Government of that colony for whom it has been designed: German silver aseptic minor operation case containing Spencer Wells's torsion forceps, bull-dog forceps, cilia forceps, dressing forceps, Syme's abscess lancet, blunt-pointed curved bistoury, finger knife, gum lancet, frænum scissors (for dressings, &c.), onychia forceps, phimosis forceps, hydrocele trocar and cannula, double-ended curette or scoop, clinical thermometer in case, silver director, and pair of probes. Slung in straps within the bag are one large glass syringe in boxwood case, one hydrocele syringe in boxwood case, one four-ounce wide-mouth bottle for iodoform in boxwood case, and one four-ounce wide-mouth bottle for boric acid. There are also in the pockets one flannel book of surgeon's needles, one packet safety pins, one packet ordinary pins, two hanks silver wire, one hank horsehair sutures, one tube carbolised chromic gut ligatures, four sea-tangle tents, one bamboo of empty capillary vaccine tubes, one bamboo of tubes containing vaccine lymph, one vulcanite set of ear and nose specula, and one vaccinating lancet. In the body of the bag there are one hypodermic syringe, one set of tabloids for same, one binaural stethoscope, one mouth speculum and tongue depressor, one chloroform bottle, one silver catheter (No. 10), one Foulis's tourniquet, one Arnold's simplex enema, one dozen tubes of Burroughs and Wellcome's tabloids, half-pound of lint, half-pound of absorbent cotton wool, one spring tape measure (inches on one side and centimetres on reverse), and half-dozen bandages. When empty the haversack weighs 2½ lb. and when filled as above about 11¼ lb. Owing to its flexible nature and the method of slinging it it can be easily carried a day's march over difficult ground in the tropics, even by a white man. It has been made for me by Messrs. Arnold and Sons, London.

B. GLANVILL CORNET, M.R.C.S. Eng.,
Chief Medical Officer, Fiji.

A THERMOMETER FOR ANIMALS.

A THERMOMETER marked with arrows on the stem to indicate the average normal temperature in the rectum of each of the domesticated animals and the fowl when in good health and at rest has been introduced by Professor Hobday to the notice of the members of the Central Veterinary Medical Association. These average temperatures are based upon about 3000 observations made with Messrs. Arnold and Sons' Kew-tested thermometer during a period of about two years on a large number of animals and birds in different parts of England under varying circumstances. It was found that the temperatures of the animals were liable to be affected to some extent by several conditions, such as age, excitement, exercise, &c. The average for the horse is placed at 100·2° F.; for the cow, dog, and cat, at 101·4°; for the pig at 102·6°; for the sheep at 104°; and for the fowl at 107°. The thermometer is made in two lengths—namely, four inches and five inches. The price in nickel-plated case is from 3*s.* 6*d.* Messrs. Arnold and Sons, West Smithfield, are the makers.

A NEW EAR CHANNEL.

WHEN an ear is being syringed it will be found both a comfort to the patient and an assistance to the operator to have a convenient means of conveying away the fluid which escapes. Towels held against the neck are seldom a complete success, both from their cumbrousness and also from their permitting fluid to trickle down between them and the skin. Some kind of receptacle provided with a waste-pipe and fitting close to the ear is in every way preferable and in this respect the pattern manufactured by Messrs. Reynolds and Branson, Briggate, Leeds, will be found advantageous. It is not fastened to the head by means of springs or elastic loops, but has a metal plate of curved outline turning on a pivot, as shown in the illustration. By shifting this curved plate the large opening through which the ear passes can be partially covered up and thereby reduced to almost any required extent, so that the appliance is adjustable to all sizes of ears and in that way comes to be self-retaining. Being made of thin sheet metal plated it is strong and light. The basin, it will be seen, tapers downwards to the waste-pipe; at its upper margin it measures four inches by two inches, so that splashing is abundantly guarded against. A piece of india-rubber tubing of any required length serves to carry away the fluid

THE LANCET.

LONDON: SATURDAY, APRIL 22, 1899.

WE have every sympathy with the London Chamber of Commerce in wishing to eliminate the pernicious and undignified system of secret commissions from all trades and professions. We endorse the suggestion that all bodies having authority over trades or professions should be ready to use their influence in elevating the principles and the standard of conduct in such trade or profession, and, where they have a disciplinary power, that they should be quick to use it in the punishment of those who accept anything which can be considered as a secret reward. We regret to see that in a recent report from the Chamber of Commerce certain charges are made against the medical profession in connexion with this subject of secret commissions—charges which ought either to be substantiated up to the hilt or promptly and fully withdrawn, for of all professions that of medicine can least afford to let such a foul blot obscure the purity of its reputation. Medical practitioners lie under most weighty responsibilities and they are credited with a high degree of honesty and simplicity of purpose. Their undoubted duty is towards their patient and they must preserve their freedom from all sinister and second-hand obligations which would hinder them in the discharge of this duty. For such duty is in itself an obligation which excludes the receiving of secret commissions. For a medical man to accept an inducement of any kind to send a patient needing medicine, or wine, or food, or a truss, or a pair of spectacles, to a particular druggist, wine merchant, food manufacturer, surgical instrument maker, or optician, is to compromise his freedom and his honour at one stroke, to tie his hands and to dirty them at the same time. It is not conceivable that any medical man rightly regarding his profession and properly versed in its traditions could place himself in such a false and undignified position.

We make no admission of the existence of such abuses in the medical profession on any such scale as to call for new or special legislation. We are certain that any such conduct properly brought home to any medical man would bring down upon him the condemnation of the body from which he holds his diploma and also that of the General Medical Council. We cannot but agree with the Council of the British Medical Association in insisting that such charges when brought against the medical profession are only to be justified by circumstantial details of individual cases. When the Founder of THE LANCET disclosed the existence of a huge system of adulteration in the common articles of commerce he placed himself on a foundation of rock by giving the particulars of analysis in every case. So, only more so, should it be with those who make charges against the medical profession. If we do not admit the existence of such evils as are suggested we do not deny that in such a large body of men there may be individual instances. But even these are not established by the kind of evidence that is adduced. The offer of undertakers to give a commission is a very different thing from its acceptance by medical men and the "open secret" disclosed by an "optician, jeweller, and silversmith" of the acceptance by hospital doctors of commissions from makers of surgical instruments is too absurd a basis for belief to be seriously insisted on as evidence. We undertake to say that at any ordinary meeting of medical men such charges would be heard with mingled indignation and incredulity. The nearest approach to a serious basis for any such legislation is in the growth of commercial companies who seek to "exploit" the medical profession and make it a party to the sale of their preparations by offers of shares and profits beyond the dreams of avarice if they will but use their medical influence. It is possible that a few medical men, infected with the commercial spirit of the age and jaded with the intense competition and the trying struggle of medical practice, may have been fascinated by the offers and advertisements of such companies and may have yielded to the temptations put before them by the promoters. If that be so we have no excuse to offer for their behaviour except it be that thoughtlessness and inexperience may have played a part. In any case they should be made to understand by the General Medical Council and other medical authorities of the country that they are violating the traditions of the profession.

But we maintain that there is no prevalence of the evil and that the existing powers of the profession are sufficient to deal with any proved offences of the sort. If experience should show that they are not so, the disciplinary powers of the profession should be increased. This, indeed, is one good result which may accrue from the present agitation on this question. The public itself, through the Chamber of Commerce, calls upon all responsible bodies to use their influence to stop such evils. The General Medical Council has the authority of the Courts for using its ethical powers for the punishment of offences which in the estimation of men of repute and standing amongst us are not consistent with the interests of the public and the dignity of the profession. But clearly such evils as the Chamber of Commerce contemplates have not yet come within this function of the Council.

AT the close of the Parliamentary session of 1898 the Lord Chancellor introduced a new Lunacy Bill. This now appears, with certain modifications and additions, as "an Act to amend the Lunacy Acts," and passed the second reading in the House of Lords on Tuesday last. It is the most important document in lunacy legislation since the Act of 1890. It comprises 32 clauses, some of which are merely formal, while others are small or useful amendments or desirable additions to previous Acts. The most important provisions of the printed Act before us refer to the temporary care of the subjects of incipient insanity which is an entirely new departure in legislation in this direction, to the subject of pensions and allowances in public asylum service, to the duration of urgency orders,

and to the powers of the Lunacy Commissioners over lunatic hospitals.

Clause 24 refers to the temporary care of incipient lunatics. It is a response to the views and opinions recently laid before the Lord Chancellor by a joint deputation of the Committees of the Medico-Psychological and British Medical Associations and closely follows the recommendations of the deputation. (An account of this was published in THE LANCET of March 4th, 1899.) The provisions of this clause should give general satisfaction. The seventh and eighth sub-clauses specify that "no person shall under this section receive more than one patient at the same time," and that a patient so received shall, after the expiration of the period of detention mentioned in the certificate and not exceeding six months, not be liable to re-certification under this section within two years after the date of expiration of the first certificate. These sub-clauses are perhaps intended to safeguard the rights of patients against possibly lax certification and it remains to be seen how they will be found to work in practice.

Clauses 21 and 22 relating to pensions and allowances are open to very grave objections and would, if they passed into law, inflict serious injustice and impair the efficiency of public asylum service. The scale of pension permitted is very low, indeed niggardly. This scale is fixed at one-sixtieth of the pay and emoluments for each year of service, a very poor rate indeed when the trying and arduous nature of the duties of asylum officers is considered. It practically throws all the interests of existing officers and servants to the winds. It takes no account of aggregate service in public asylums and there is no provision or possibility of added years for special qualifications. And even such an allowance as the above is by no means assured to the officer when his term of service has expired, for the granting of it is conditioned by the proviso that the retiring officer must have, in the opinion of the visiting committee, "served with diligence and fidelity and to the satisfaction of the committee," and the members of the committee may if they think otherwise "grant him such allowance as they think proper." This might conceivably be reduced so low as to be a mere pittance barely enabling the recipient to live on it. This must be a dangerous policy to create, for committees come and go—being members of local county councils or of boards of guardians elected by local suffrage—and history shows that committees vary considerably and it is quite conceivable that in the changes and chances of things a new committee might arise "which knew not JOSEPH" and the grants of which might be influenced accordingly. The "satisfaction of the committee" must have been proved year by year in the officer's past service, the fact of his continuance in office would be *ipso facto* proof of it, and it would be hard indeed if the latest committee should have it in its power to withhold what had been already earned by years of faithful service under many committees. A more excellent and just way would be to fix a compulsory irreducible minimum, say one-fiftieth to one-fortieth, and a sliding scale for merit rising up to a permissive maximum (of, say, two-thirds) left to the discretion of committees. The provisions with regard to compensation for injuries are also unsatisfactory, being too vague and indefinite.

Clause 1 referring to the shortening of the period of "urgency orders" for from seven to four days creates a requirement which must be hard to fulfil in country places where magistrates are few and far between and not always or readily accessible; and it further entails the disagreeable consequence to the community of the discharge of a dangerous urgency case—e.g., a lunatic with dangerous delusions or with violent homicidal or suicidal propensities—from lapsing of the urgency order under which he was detained, should the asylum authorities be unable to find a magistrate to sign it within the specified four days. The efficiency of this provision is thus in its present form doubtful.

Clauses 14 to 17 greatly extend the powers of the Commissioners over lunatic hospitals and is a step in the right direction. It must tend towards increase of efficiency in the administration generally of such institutions, while suggestions from the authoritative body, which hitherto could be politely ignored or set aside by committees and local powers that be, will in future come with the force and sanction of statutory mandates which cannot be disregarded or evaded. The increased powers placed in the hands of the Commissioners must bring with them correspondingly increased duties and labours. The Commissioners are a hard-worked body and possibly the requirements under the new Act may be an indication that the staff of the Commissioners in Lunacy is to be increased.

THE pleas which are usually employed by those who do not desire to allow that the perils of football have any serious existence—viz., that other sports are more dangerous and that the number of those who play football makes the number of accidents appear unduly large—cannot be held consolatory to the general public; for if hunting and shooting have one measure of danger and football another—a thing which no one disputes—the men who hunt and shoot belong to a small class while the danger of football lies at the door of every family. The danger may be statistically small but it is universally present. Nowadays all sorts and conditions of people play football—small boys, big boys, young men, and middle-aged men; the strong, the delicate, and (less rarely than should be the case) the weak. For the game is exactly fitted by its splendid muscular exercise as much as by the moderation of its demands upon the time and purse of its votaries to be a truly national sport. Hence it is a matter of real importance both to medical men and to the public whose health is in their charge to face the question of how far the game is dangerous, and we wish to record our belief that the danger is undoubtedly decreasing while the popularity of the game and the skill of its exponents mount higher and ever higher. This fact may, we think, mitigate the fears of those persons to whom figures offer but cold comfort and who cannot derive relief from the knowledge that where so many are in danger but few individually are taking risks. We have the greater pleasure in stating our belief that the perils of football are not so acute as they were a few years back because we have considered it our duty to point out from time to

time in uncompromising terms the fact that football is distinctly a dangerous game. While fully crediting the game with enormous athletic charms we were bound to see in a sport which led every year to violent deaths while it furnished a regular supply of hospital casualties from week to week a subject for investigation too serious for the honest inquirer to allow himself to be frightened away by the disagreeable epithet of milksop. We therefore made lists of the accidents which occurred and published them with occasional comments, a proceeding which annoyed some persons calling themselves "sportsmen," who seemed to think that the more brutal a game was the more manly it was, and greatly gratified certain parents who thanked us effusively for lifting up our voice against football—which we have never done. As a result of having kept a record for some years of accidents and fatalities arising out of football we are able to estimate roughly whether these are on the increase or decrease, and it appears to us certain that during the last four years the dangers have diminished. We have no doubt that the reason of this is that local and central organisations alike have learned to take more care that clubs whose members do not exhibit the proper sporting spirit should be punished. For at football the spirit in which the game is played regulates to a great extent its perils, no multiplication of rules and penalties and no watchfulness on the part of referees, whose powers are now very great, sufficing to prevent the player who is foul in mind from being foul in action. No one who witnessed the final round in the English Association Cup competition which was played at the Crystal Palace on April 15th could fail to have been struck by several things illustrative of what we have said. First, it was certain that there were very real possibilities during the game of dangerous accidents owing to the fearless tactics of the players and the great speed at which the game was maintained. Secondly, no accidents worth mentioning occurred because the experience and precision of the players precluded the errors of misjudgment which lead to catastrophe showing clearly that in football as in other sports it is the "duffer" who is the cause of other people coming to grief even when he does not come to grief himself. And, thirdly, it was the desire of both sides to play with fairness, a sentiment which was echoed by the voice of the huge crowd which sat spellbound for 90 minutes watching the changes and chances of the struggle.

Annotations.

"Ne quid nimis."

THE LATE SIR WILLIAM ROBERTS.

By the death of Sir William Roberts, which occurred on April 16th, there passes away from our midst one of the foremost exponents of the science and art of medicine. Scotland has recently had to mourn the loss of two of her distinguished sons in the persons of Joseph Coats and John Struthers and now a similar grief afflicts Wales. We shall next week give a detailed account of Sir William Roberts's distinguished career, but we may here briefly indicate the main events in his life. He was born in 1830 and was the son of Mr. David Roberts of Anglesey who was, like himself, a medical man. He was educated at Mill Hill School and at University College, London, graduating as M.D. of the University of London in 1854. Being appointed house surgeon to the Manchester Infirmary he was after a very few years made physician to that institution, a post which he held for 30 years. He was, besides, the first Professor of Medicine at the Victoria University. In 1885 he received the honour of knighthood and shortly afterwards he removed to London. He gave the Goulstonian Lectures before the Royal College of Physicians of London in 1866, in 1880 the Lumleian Lectures, in 1892 the Croonian Lectures, and in 1897 he delivered the Harveian Oration, taking for his subject "Science and Modern Civilisation." His chief scientific work was concerned with the function of digestion and the diseases of the kidneys, upon which subjects he contributed various treatises to medical literature. The subject of education was one in which he took the keenest interest and as a member of the Senate of the University of London, as representative of that University on the General Medical Council, and as a member of the Statutory Commission appointed to further the establishment of a teaching university for London he did most valuable service. He was a most admirable clinical teacher, a good writer, and a sound, practical physician—points in his character which were evident in his masterly memorandum on the opium habit published as an appendix to the Report of the Opium Commission of 1893. He was greatly and even affectionately respected in the profession, the younger members of which in particular felt that they had in him a friend whom they could always approach for counsel and on the good sense of whose advice they could always rely.

THE AGITATION AGAINST VACCINATION.

If any evidence were necessary of the irreconcilable attitude of the Anti-Vaccination League, notwithstanding the concession made to the conscientious objector by the Vaccination Act of last session, it may be found in the report of the annual meeting of that body recently held in St. Martin's Town Hall, London. Amongst a number of other announcements as to the methods by which the League proposes to demonstrate its activity, including the establishment of a "Woman's Anti-Vaccination League" and the maintenance of a band of paid lecturers, it was officially stated that although the income of the parent body is between £800 and £900 a year this was not enough to meet its requirements. It had therefore been decided to raise a special fund of £5000 for the purpose of carrying on the war against vaccination. Towards this fund £1100 had been already promised by some half-a-dozen donors, including £500 from the Countess de Noailles and £200 from Mr. William Tebb, ex-President of that body. It was intimated that this fund was specially designed to meet the malevolent designs of the Jenner Society. It would thus seem that the modest efforts of the latter society to counteract the mischievous propaganda of the League are made the pretext for a new appeal to the generosity of the wealthy supporters of that body. As the work of education in sanitary as in other matters is mainly a question of finance it is evident that the Jenner Society will need greatly enlarged support from the general public compared with that which it has yet received if it is to adequately meet this renewed effort of misdirected enthusiasm to prejudice the public against the experience of a century and to set back the clock of medical science to the time of the dark ages. It is to be hoped that amongst the many wealthy persons who have of late expressed themselves in no measured terms against the hasty capitulation of the Government last session there

may be found some who will be stimulated by the example of the patrons of the League to help to provide the antidote to the bane which will thus be scattered broadcast with fresh activity. The Jenner Society is doing excellent work and deserves every support. The following resolutions which have recently been passed by the executive committee of the society show well the practical nature of its work:—

1. That it is desirable that the form of certificate of successful primary vaccination should in all cases record "the number of separate scarified areas, punctures, or groups of punctures made, and the number of separate normal vaccine vesicles which have been produced," as required in Clause 3 of the Instructions to Public Vaccinators, contained in Schedule 3 of the Order of the Local Government Board of Oct. 13th, 1898; and that the certificate, when so filled up, should be registered, so that it may be a permanent record of the nature of the vaccination in each case, and that it should be available at any time for reference.
2. That it is also desirable that the certificate should bear on its face some statement of what in the opinion of the Local Government Board constitutes "efficient," as distinguished from "successful," vaccination, in terms of the prescription in Clause 7 of the same instruction, so that parents or guardians who refuse to have their children vaccinated according to the standard so prescribed may at least be informed by the certificate of the responsibility they incur in so refusing.
3. That the above resolutions be communicated to the President of the Local Government Board with the expression of the hope that he may see fit to issue an order to give effect to them.

THE USE OF TUBERCULIN.

DR. HAROLD SCURFIELD, the medical officer of health of Sunderland, read a very sensible paper on April 8th before the members of the Newcastle Farmers' Club. Dr. Scurfield's subject was the question whether the Government should take up the matter of the use of tuberculin in lessening the prevalence of tuberculosis amongst cattle and children and his reply was in the affirmative. He commenced by acquainting his audience with some evidence to show that cow's milk is a cause of tuberculosis in human beings and then went on to show how this danger might be averted. First, the milk may be rendered innocuous by being boiled or sterilised, although, of course, this is a weak policy and it is much better to attack the disease at the fountain head. Secondly, cows may be frequently inspected, but this is not of much use, for a cow may be seriously affected by tuberculosis and yet give no outward signs. Thirdly, there is the tuberculin test which is practically infallible. That this is so was very well shown by the case of Her Majesty's herd of dairy cows at Windsor, the tests in regard to which we published in our issue of April 15th. Dr. Scurfield reminded his audience that it would be quite worth their while to adopt the use of tuberculin voluntarily, for in process of time they would get a tubercle-free herd. Moreover, people would willingly pay, and are already paying in some cases, increased sums for milk certified to have come from a cow which has been tested and which has not reacted. But the voluntary use of tuberculin can at best be of only limited extent and therefore the State should step in. Dr. Scurfield suggests that the test should only be applied by a duly qualified veterinary surgeon who should be bound under a penalty to brand any reacting animal—"that the tuberculin and the services of a veterinary surgeon to perform the test be offered free of charge to any farmer or breeder who will agree to isolate the sound from the reacting animals, and that compensation be paid for any of the branded reacting animals which on being slaughtered within a reasonable time, say one year, is found to be unfit for food." There are several other suggestions, but we have given the most important so far, but the final one runs shortly as follows. Five years after the former suggestions have become law no compensation for condemned carcasses is to be given; no milk from any tuberculous cow is to be sold; any animal may be tested by the local authorities and if reacting may be sold and fattened for killing without compensation; all cattle are to be sold with an implied warranty that they are free from tuberculosis. Dr. Scurfield's suggestions are apparently sound. Of course, they might not work when put into practice, for even the best scheme on paper sometimes fails, but we should say that they are worth a trial. The late Royal Commission on Tuberculosis, as Dr. Scurfield reminded his hearers, concluded that at present it would not be fair to blame the ordinary agriculturist for sharing in the general ignorance on the subject, but "as soon as the proper treatment and precautions have been formulated it will become his duty as well as his interest to put himself beyond the risk of loss by confiscation."

THE GENERAL MEDICAL COUNCIL AND MR. ALLINSON.

AMONG the many hindrances to the efficiency of the disciplinary action of the General Medical Council in removing the names of practitioners from the Register who have been found guilty of infamous conduct in a professional respect is the fact that practitioners so removed have repeatedly tried to practise as before. Even when their diplomas have been withdrawn or cancelled they have contrived to associate their names with the bodies from which their diplomas were obtained, whose authority and whose honour they disregarded. A bold offender in this way is Mr. Thomas Richard Allinson. In 1895 he was summoned before the Marylebone Police-court for continuing to use the title of L.R.C.P. Edin. after the Royal College of Physicians of Edinburgh had deprived him of his diploma. The law was enforced by the defendant being fined £20 and 10 guineas costs. Mr. Allinson has again been summoned before the same court on the double charge, first, of wilfully and falsely pretending to be a doctor of medicine by writing his pamphlets and letters under the title of "Doctor," and secondly, of using titles and descriptions implying that he was recognised by law as a physician. The title of L.R.C.P. Edin. had been used with the prefix "ex," thus—ex-L.R.C.P. Edin. Mr. Curtis Bennett held that in speaking of himself as "Dr." Allinson he meant to imply that he was a doctor of medicine. For that he fined him £5 and 5 guineas costs. But he dismissed the second summons. It is to be regretted that the device for advertising the old title has not been punished. It will still continue to deceive many ignorant people who may find in the qualifying preposition only another addition to the old title.

THE OPERATIVE TREATMENT OF FACIAL PARALYSIS OF AURAL ORIGIN.

IN *La France Médicale* of Feb. 10th Dr. F. Mounier points out that facial paralyses of aural origin are more common than is supposed. In all cases of facial paralysis the ear should be examined. In acute otitis media without perforation of the drum a collection of fluid in the tympanum may compress the facial nerve in the Fallopian canal, which often opens into the middle ear. The accompanying pain is attributed to the nerve disease and in the absence of discharge otitis is not thought of. Opening of the tympanum, which gives issue to serous fluid or pus, is the only treatment. But adhesions in these unrecognised cases of otitis may by compression of the nerve produce permanent paralysis (Politzer). Sometimes spontaneous perforation of the membrane is insufficient to remove the pressure on the facial nerve. Chronic suppurative otitis with caries is the most common cause of facial paralysis. Formerly such cases were thought to be beyond the resources of surgery, but even in the most chronic compression may be the cause of the paralysis and something may be done. The following case is a marked example of facial paralysis from acute otitis and it shows the failure of spontaneous perforation of the drum to relieve the

paralysis. A man had pains in the left ear for two days. Discharge of pus occurred and facial paralysis gradually appeared on the same day. There was a small perforation in the lower part of the anterior segment of the membrana tympani. Politzerisation produced gurgling, but only imperfectly cleared the tympanum. A large opening was made in the drum and pus escaped with facility. Boric acid douches and carbolic instillations were used; the suppuration diminished, and the paralysis disappeared in a few days. The following case is an example of facial paralysis from pressure of a large cholesteatoma. A tuberculous girl, aged 16 years, had had otorrhœa for three years. The left external ear was filled with a large polypus. When this was removed the membrana tympani was found to be normal; the pedicle of the polypus was situated in a perforation in the posterior wall of the meatus about a fifth of an inch from the tympanum. Three months later facial paralysis suddenly appeared. The antrum was trephined. The pedicle of the polypus was found growing from the bony wall separating the antrum from the tympanum. There was great loss of bone the place of which was occupied by a mass of cholesteatoma of about the size of a pigeon's egg. The anterior wall in the position of the facial nerve appeared to be friable. That evening the paralysis of the orbicularis palpebrarum diminished and on the following day all facial paralysis had disappeared.

NOTIFICATION OF MERCURIAL POISONING.

EVERY year witnesses the increasing application of science to art and industry and inevitably this fact means the need in many instances of applying particular protective measures to the operatives concerned. We have heard much of late of the steps it is proposed to take to secure greater safety to the health of those engaged in workshops where lead and phosphorus are liable to poison the system, as in the potteries and matchworks, and now it would appear that the Secretary of State feels justified in issuing a special order in regard to mercurial poisoning. Mercury is a valuable handmaid in the elaboration of many useful products, but unfortunately bodily contact with it is attended with risk, and mercurial poisoning may even be traced to the fact that the liquid metal is volatile at ordinary temperatures. The Secretary of State has now by an order dated March 27th, 1899, applied the provisions of Section 29 of the Factory and Workshop Act, 1895, requiring notification of cases of anthrax or of lead poisoning, phosphorus poisoning or arsenic poisoning, contracted in a factory or workshop, to all cases of mercurial poisoning so contracted, such order to come into force on May 1st, 1899. After this date, therefore, every medical practitioner attending on, or called in to visit, a patient whom he believes to be suffering from mercurial poisoning contracted in any factory or workshop is required under penalty to notify the case forthwith to the Home Office unless it has already been notified. He is entitled to a fee of 2*s.* 6*d.* for so doing. Particulars of the form which the notification should take will be found in our advertisement columns. This intimation has been issued from the Home Office by the Chief Inspector of Factories, Dr. Whitelegge.

PHLEBITIS IN ACUTE RHEUMATISM.

PHLEBITIS is a rare complication of acute rheumatism. In 1896 M. Widal and M. Sicard in describing a case stated that there were only 16 cases on record. In the *Progrès Médical* of Feb. 25th M. Charles Garnier relates two cases. The first case was that of a man, aged 48 years, who had endocarditis and a fourth attack of rheumatic fever. On the fifty-eighth day when the articular pains were declining he had increasing pain in the left calf. The limb began to swell at the ankle and the œdema spread up to the knee. Soon afterwards the superficial veins of the limb became dilated and there was œdema which extended as high as the top of the thigh. The calf was tender and so was the course of the popliteal and femoral veins as far as the femoral ring and groin. No cord could be felt. There were presystolic and systolic cardiac murmurs. Phlebitis of the femoral and popliteal veins and probably of the external saphenous vein was diagnosed. These symptoms disappeared in 11 days. Then the left elbow became painful and on its anterior aspect red and swollen. A zone of induration running in the axis of the limb and in its lower part in the position of the median basilic and basilic veins could be felt. There was a little œdema in the upper part of the forearm. The swelling and redness disappeared in a few days but induration of the basilic veins remained for some time and induration of the external saphenous vein still persisted when the patient left the hospital. In the second case the subject was a young man, aged 19 years, who had mitral disease and had had several attacks of rheumatism. On the eighth day of the last attack he entered the hospital. Swelling could be felt in the track of the internal saphenous vein which in the thigh took the form of a hard, painful cord. There was slight œdema of the thigh. On the twelfth day, when he left the hospital, all that remained was induration of the saphenous vein extending for a distance of four inches. Phlebitis is perhaps not such a rare complication of rheumatism as is supposed. Bouillaud who first wrote on the subject expressed this opinion in 1840. M. Garnier has collected 28 cases of rheumatic phlebitis. The lower limbs were affected in 20, the upper in two, and both upper and lower in three. The predominance of thrombosis of the lower limbs is explained by their liability to venous obstruction and varicosity.

THE FACTORY GIRLS' COUNTRY HOLIDAY FUND.

THE annual meeting of this fund, of which the Princess Christian is patron, will be held at the Charterhouse, E.C., on Thursday afternoon, May 4th, at 3.15 P.M. The Rev. Dr. Haig Brown will preside and the Bishop of Islington, the Rev. Canon Scott Holland, the Rev. Canon Barnett, and others will address the meeting. When it is remembered that a large number of the recipients of the benefits of this fund will in all probability become the mothers of future workers but small persuasive efforts on the part of the committee of the fund should be needed to induce the moneyed public to generously support the cause; but even apart from that consideration the health and general well-being of the girls who are employed in our workshops and factories must appeal to all. The title of the fund is somewhat of a misnomer, for its benefits are bestowed upon many other workers as well as upon factory hands, and there must be scarcely a member of the community who is not in some way dependent upon those for whom the fund is administered. Another fact, too, which should be borne in mind is that if by a much-needed holiday the working classes can be kept in good health the strain on our hospitals should be greatly diminished. During the year 1898 there were 1724 girls and women sent to the seaside or to the country, as compared with 1250 in 1897. The receipts for the year amounted to £1610 15*s.* 3*d.*, including the payments made by girls and women, which amounted to £394 13*s.* The work of the fund is greatly increasing and unless a greater amount of financial support is forthcoming the number of people sent away each year will have to be curtailed. It is not only financial support, however, that is needed but the loan of country houses by the wealthy. The fear that the class of girls who benefit by the fund would not appreciate such privileges is proved to be unfounded by

the success of Lady Dysart's invitation to 153 girls and women whom she treated as her guests last year at Weald House, St. Neot's. The address of the secretary is, Miss Canney, St. Peter's Rectory, Saffron-hill, E.C.

THE BERLIN CONGRESS ON TUBERCULOSIS.

A CONGRESS having for its subject the Prevention of Tuberculosis will be held in Berlin under the patronage of H.I.M. the Empress of Germany from May 24th to May 27th. The President is the Imperial Chancellor Count Hohenlohe-Schillingsfürst and the Vice-President is Dr. von Leyden. The objects of the conference are to make the dangers of tuberculosis as a disease known among people in general and the best means for combating the disease. Besides these subjects will be discussed the present range of knowledge concerning tuberculosis and the various methods of prevention, more especially the treatment by sanatoria. The business of the congress will be conducted in five sections as follows: (1) distribution; (2) etiology; (3) prophylaxis; (4) therapeutics; (5) sanatorium treatment. Some of the members of the organising committee in charge of the various sections are: for Section 1 Dr. Köhler of Berlin and Dr. Krieger of Strasburg; for Section 2 Dr. R. Koch and Dr. Fränkel, both of Berlin; for Section 3 Dr. Gerhardt and Dr. Schjerning, both of Berlin; for Section 4 Dr. von Ziemssen of Munich and Dr. von Schrötter of Vienna; and for Section 5 Herr Gaebel of Berlin and Dr. Dettweiler of Falkenstein.

THE PAY OF COLLIERY SURGEONS.

THE conflict between the miners and the medical men is still going on and the local press continues to publish letters on the matter. In the *Newcastle Leader* of April 15th is a letter signed "Dike." This correspondent traverses the statements of the "President of the Medical Union" and maintains that a miner's wages are about £76 per annum, out of which he has to pay small sums amounting in all to about £4 a year, including "doctor, 6*d.*; blacksmith, 3*d.*; Roman Catholic priest, for those who pay to him ....." Further, "if he be a 'chapel man' he has a good deal to contend with in dress expense, for if he cannot dress well and contribute well he soon receives from his brethren and his minister the cold shoulder." "Now," continues "Dike," "I should like to ask any doctor if he would like to keep his house going on the same income, or if they simply regard a miner's wages as lawful prey." "Dike" also says that the miner's tools are expensive, must be kept good and are subject to constant wear, whereas when a medical man "buys a complete set of surgical instruments they will not only serve his lifetime but the lifetime of several after him." This, of course, is an absolutely absurd statement. To take some other expenses mentioned by "Dike," the average medical man may not have to pay 3*d.* for a blacksmith, but he has to pay school board rate for educating other people's children and also, even if he be a member of that much-abused body the Church of England, he is wont, not obliged, to give some alms, although we do not fancy that any rector or vicar would give a poor man the cold shoulder simply because he was poor. "Dike" also says that miners have their hobbies and they have to be paid for out of their own pocket. Well, medical men have hobbies, too, and have to pay for them. The only people for whose hobbies other people pay are anti-vaccinationists and education fanatics. As to a medical man keeping a house going on £76 per annum, not only would no one like it, but we doubt whether anyone could do it in these days, and a miner should remember that he spends practically nothing in educating himself for his calling while a medical man spends at least £1000. We cannot resist quoting the following paragraph from the *Newcastle Leader* of April 14th, for we are sure the practitioner in question will like his success to be made known to his professional brethren:—

GATESHEAD.

Colliery Doctor.—The Ravensworth collieries have finally decided against the doctor's claim for threepence advance, and have secured the settlement of an experienced medical practitioner, M.D., L.R.C.P., L.R.C.S., for the usual sixpence per fortnight, with whose conscientious regard to duty, anxious solicitation for the well-being of his patients, and gentlemanly deportment they are more than satisfied.

INFANTILE MYXŒDEMA.

A CASE of infantile myxœdema reported by M. Roussoff is quoted in the *Journal de Clinique et de Thérapeutique Infantiles* of March 30th. The subject of the disease was a little girl, aged two and a half years. She exhibited the classical symptoms of myxœdema and was treated for 127 days with $\frac{1}{10}$ centigramme of thyroid extract twice a day. Her temperature, which had been below 95° F., rose to 97·9°; her mental state, which had before suggested idiocy, became bright and lively, and her physical signs improved in an even more marked degree. The child died some months later from broncho-pneumonia after measles and the thyroid gland was found on post-mortem examination to be atrophied. The very early age of the patient, the associated suggestion of a possibly congenital origin of her disease, the distinct benefit obtained by treatment, and the final proof of thyroid atrophy combine to render this case peculiarly interesting.

MEAT EXTRACTS OF VILE ORIGIN.

RECENT revelations in regard to the filthy material from which meat extracts are, as it would appear, occasionally made, call for a system of vigorous control in regard to the meat extract trade in general. Moreover, the present state of matters is exceedingly harsh upon honest manufacturers who place upon the market wholesome extracts which serve as useful and valuable nutrients and stimulants. At present the protection afforded to the public in this regard is feeble in the extreme, but surely it cannot be difficult to devise an efficient scheme which shall make it impossible to place upon the market vile preparations called "meat extract" which are made from putrid livers and offal. It might be thought impossible that such filthy material could be fabricated into a toothsome paste, but so it is, the use of deodorisers and subtle flavouring materials having been placed at the disposal of the offal-monger by the advances (alas, that it must be so confessed) of chemical knowledge. According to certain cases which have been before the public during the last year animal substances were actually about to be employed in which the putrefactive process had made a fair start. Of course cooking would destroy most noxious germs, but their products, the poisonous ptomaines, would remain. Indeed, if the poisonous ptomaines were elaborated they would be difficult to destroy. Their presence in an extract would cause very serious symptoms of poisoning. Gravies, soups, and stock, especially at hotels and restaurants, are for economic reasons often made up with meat extracts, and should these extracts of vile origin be used little astonishment could be expressed at the occurrence of obscure cases of poisoning. A system of control should be established by the State and imported extracts and extracts made at home should be examined chemically and bacteriologically from time to time, while a very vigorous watch should be maintained on the disposal of offal and all such nastiness. In any case, on the conviction of a man wicked enough to attempt to retail a meat extract for public consumption which he knew had been prepared

from putrid substances the punishment should be made to fit the crime: he should be committed to prison without the option of a fine and there be compelled to subsist (if that could be possible) on a dietary in which his own filthy commodity was the chief item.

DIPHTHERIO-SCARLATINAL THROAT.

A PAPER by M. Chabade is quoted by the *Journal de Clinique et de Thérapeutique Infantiles* of March 30th, in which the writer draws attention to the not infrequent alliance of scarlatinal and diphtheritic germs in a mixed infective process. An observation of 214 cases of scarlatinal sore-throat has resulted in the discovery of Löffler's bacillus in 6 per cent. of the total number. This bacillus was not found in any case with merely catarrhal throat. Where the disease was follicular it was found twice in 33 cases. Where it gave rise to the formation of false membrane the proportion rose to 13 in 116 cases. It was also noticed that the mortality in the mixed form was twice as great as that in the purely scarlatinal variety. These facts, it is not without reason contended, show the value of bacteriological diagnosis in doubtful cases, and the importance of supplementing the ordinary treatment of scarlet fever on occasion with the injection of diphtheria antitoxin. When we consider the part played by defective house-drains in the dissemination not only of one but probably of various infective poisons the mixed contagion above mentioned is not difficult of explanation. We may reasonably trace to this cause not a few cases of so-called malignant scarlet fever with membranous throat.

"THE DILATORY CHURCHWARDENS."

IF the wise Agur who has left us a list of four things which he could not understand had lived at the present time he would surely have added to his list the way of a vestry. As long ago as August, 1898, the Home Office sent a letter to the parochial authorities of St. George the Martyr, Southwark, ordering the crypt of the church to be cleared of a collection of old coffins, bones, and other mortuary remains. As we mentioned in THE LANCET of Feb. 25th, 1899, the letter was only discovered on Jan. 24th, when it was referred to the vestry. Nothing was done and the matter came up again at a vestry meeting on April 4th when another letter was read from the Home Office saying that the crypt must be cleared at once. The remains of Bishop Gardiner and Bishop Bonner might, however, be left or be reinterred in the churchyard. Mr. Benham, a vestryman, is reported as saying that this was the way in which the Government always treated the working classes. The corpses of humble working men were to be flung out of the crypt but those of blue-blooded bishops might stop. It may soothe Mr. Benham's democratic soul to be told that the Home Office is in error and that Gardiner was, according to the best authorities, buried at Winchester, while Bonner was buried in the portion of the churchyard, not the crypt, of St. George's allotted to felons from the Marshalsea where he died. So, unless his body was dug up and placed in the crypt later, it is not and never has been there. However, the fact remains that there are numerous fragments of undesirable material in the crypt and that they have got to be removed. The vestry are still of opinion, to use the words of one member, that they can "thwart" the Home Office and so maintain their attitude of pig-headed obstinacy. We fancy, however, that they will find the Home Office not so easy to thwart and that the work will have to be done, but we hope that they will remember that human remains, even those of "blue-blooded" persons, should be treated with reverence.

MAJOR RONALD ROSS, I.M.S., who has just been elected to the post of Lecturer in Tropical Medicine in the Liverpool School of Tropical Diseases, has had 18 years' training in his subject, while his discoveries in relation to the malarial parasite have placed him amongst the foremost investigators. In January last Dr. Laveran communicated Major Ross's researches to the French Academy of Medicine, the Italian observers have confirmed his observations, and more recently Professor Koch has shown their importance and accuracy. In no place in this country will such work be more generally appreciated than in Liverpool.

H.R.H. THE DUKE OF CONNAUGHT will preside at a festival dinner in aid of the funds of the East London Hospital for Children, Shadwell, to be held at the Whitehall Rooms of the Hôtel Métropole on Monday, May 15th.

AN action brought on Tuesday last at Manchester against the "female American doctor," Mrs. Longshore-Potts, for negligence and want of skill proved successful, the jury returning a verdict against her with damages £175.

A MEETING will be held at the Mansion House under the presidency of the Lord Mayor on behalf of the Buildings Improvement Fund of the Royal Free Hospital, Gray's Inn-road, on Tuesday next, April 25th, at 3 P.M.

H.R.H. THE DUKE OF CAMBRIDGE, President of the Sanitary Institute, will preside at the annual dinner of the institute to be held in the Whitehall Rooms of the Hôtel Métropole on Tuesday, May 2nd.

WE sympathise with the Royal College of Surgeons of England whose appeal against the assessment made upon the buildings of the College has been dismissed.

A ROYAL CHARTER has been granted by the Queen to the League of Mercy which was designed for the purpose of aiding the Prince of Wales's Hospital Fund.

WE have received from the Colonial Office the information that at Hong-Kong during the week ended April 15th there were 10 cases of plague with four deaths.

LORD LISTER becomes the first President of the St. Mary's Children's Hospital, Plaistow.

TUBERCULOSIS IN ENGLAND AND WALES.

IN view of the real and exceptional interest which is now being manifested concerning the subject of tuberculosis, not by medical men only, but by other intelligent persons everywhere, we have been induced to inquire somewhat closely into what may be termed the natural history of this baneful malady in so far as it affects the human being, our object being to ascertain from reliable sources, firstly, what is the actual extent of the ravages which the chief forms of tuberculosis inflict upon the community; and secondly, whether diseases of this type are actually decreasing amongst us or whether, on the other hand, an increase is observable in the prevalence of tuberculosis in certain of its forms.

Bearing in mind the exhaustive investigations which were undertaken in 1897 on behalf of the Royal Commission on Tuberculosis by Dr. Tatham of Somerset House we have applied to him for advice in preparing for the purposes of the present article such statistical information as should best achieve the object we have in view. Dr. Tatham has kindly placed at our disposal the materials from which the

tables accompanying have been compiled; he has also given us helpful suggestions as to how the necessary data may best be summarised and arranged for comparison as well as for future reference.

That the public conscience is now effectually aroused to a due sense of danger from the unchecked spread of tuberculosis amongst the community is shown by the fact that a "National Association" for its prevention has already been founded and that under the highest patronage it has already begun good work by means of local branches in almost every part of the country. It would therefore appear to be in the highest degree desirable that full and trustworthy information concerning the nature of this disease should be diffused throughout the community as widely as possible in order that such measures for its prevention as shall be decided upon may proceed on sound principles. We therefore believe that our readers will appreciate the present endeavour to provide them with a convenient summary of all that can be ascertained on the subject of tuberculous mortality in the past, the information having been derived from trustworthy sources and having been brought down to the most recent date possible.

It has frequently been stated in these columns that consecutive records of death causes in England and Wales do not exist for periods earlier than the year 1847, consequently the decade 1851–60 is the earliest for which it is possible to calculate rates of mortality. And with respect to mortality by specified causes it should be mentioned that the data are not entirely trustworthy, for we know that medical certification of death being merely optional in these early years the causes of death were often but imperfectly described in the registers and this was almost certainly the case concerning deaths from tuberculous disease, in the detection of which mistakes and confusion were notoriously common—in certain parts of the country, at any rate. This fact should be taken into account in comparing the mortality from various causes during the "fifties" and "sixties" with the more accurate figures of recent years.

TUBERCULOSIS IN ENGLAND AND WALES.

*A.—Mortality from Phthisis at Specified Ages, in Several Periods, from 1851 to 1897.**

	Periods.	Deaths in 1,000,000 births.					Deaths in 1,000,000 living.										
		Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	All ages.
Males.	1851–60	2119	1475	761	446	371	1329	525	763	2399	4052	4031	4004	3830	3331	3389	928	2579
	1861–70	1437	1137	589	345	291	990	431	605	2190	3883	4094	4166	3861	3297	2024	659	2467
	1871–80	1221	880	401	258	228	783	340	481	1675	3092	3699	4120	3860	3195	1924	603	2209
	1881–85	918	639	321	208	187	584	274	372	1381	2467	3246	3726	3567	2937	1800	645	1927
	1886–90	820	591	278	186	158	521	234	318	1212	2222	2842	3436	3446	2904	1845	733	1781
	1891–95	679	546	272	192	163	467	197	260	1075	2026	2548	3268	3205	2686	1572	563	1634
	1896	533	463	250	195	144	392	150	203	913	1848	2285	3029	3042	2599	1329	512	1485
	1897	607	487	275	157	183	421	145	200	939	1858	2384	3087	3124	2698	1510	572	1532
Females.	1851–60	1942	1482	825	498	448	1281	620	1293	3516	4288	4575	4178	3121	2383	1635	716	2774
	1861–70	1299	1139	618	389	337	947	477	1045	3112	3967	4378	3900	2850	2065	1239	447	2483
	1871–80	1137	885	447	268	238	750	375	846	2397	3140	3543	3401	2464	1777	1093	407	2028
	1881–85	809	661	332	224	216	553	350	749	2006	2596	3070	2927	2197	1541	995	372	1738
	1886–90	708	588	272	207	194	483	307	658	1626	2075	2555	2563	1936	1490	966	423	1497
	1891–95	604	517	263	184	161	421	260	561	1428	1740	2155	2305	1742	1294	800	360	1303
	1896	407	459	231	192	190	349	204	454	1183	1562	1875	2060	1543	1170	676	375	1139
	1897	429	416	232	187	123	326	210	415	1212	1607	1896	2150	1901	1245	847	334	1162

* Table A may be read thus (taking the first line of figures): according to the experience of 1851–60, out of every million male children born there died from phthisis 2119 under one year, 1475 under two years, &c. Also of every million males living there died 1329 under five years, 525 from five to 10 years, &c. Tables B, C, and D may be read similarly.

B.—Mortality from Tabes Mesenterica at Specified Ages, in Several Periods, from 1851 to 1897.

	Periods.	Deaths in 1,000,000 births.					Deaths in 1,000,000 living.										
		Under 1 year.	1–	2–	3–	4–	Total under 5 years.	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	All ages.
Males.	1851–60	3440	1955	813	364	214	1752	168	86	43	29	15	11	15	20	23	9	282
	1861–70	4112	2192	789	318	192	1993	155	80	49	34	19	16	20	25	19	6	320
	1871–80	4850	2301	720	294	169	2198	142	77	52	31	18	19	18	21	21	8	347
	1881–85	4807	2021	677	266	176	2047	130	73	45	29	20	18	20	25	23	9	319
	1886–90	4933	1788	575	243	142	1964	111	61	48	37	26	21	18	24	19	10	293
	1891–95	4455	1561	424	214	133	1737	109	68	48	36	28	25	27	26	25	16	259
	1896	3777	1169	393	219	123	1408	93	49	55	41	30	22	22	28	17	6	214
	1897	3901	1243	386	165	122	1438	100	58	62	49	34	21	29	38	10	6	223
Females.	1851–60	2885	1854	760	324	215	1498	146	96	58	32	26	18	22	19	17	8	239
	1861–70	3474	2086	757	312	182	1718	124	82	70	43	34	25	26	28	21	6	272
	1871–80	4069	2158	670	263	165	1858	117	80	68	42	33	25	25	25	26	9	290
	1881–85	3887	1839	598	242	152	1659	125	89	61	43	34	27	23	27	25	12	261
	1886–90	3874	1619	474	203	133	1566	120	80	67	46	37	31	27	21	25	11	240
	1891–95	3623	1445	453	200	140	1429	109	77	69	58	43	38	30	26	22	10	219
	1896	2956	1072	382	192	109	1116	91	60	62	47	51	45	37	22	22	4	179
	1897	3111	1067	320	153	100	1122	91	86	65	58	43	37	29	25	21	—	181

THE GROUP OF TUBERCULOUS DISEASES.

The following well-known forms of disease are included under separate headings in the national records: (1) phthisis; (2) tabes mesenterica; (3) tuberculous meningitis or hydrocephalus; and (4) scrofula, with other forms of tubercular

These forms of disease in the aggregate caused a mortality at all ages which in the seven years ending with 1897 was equal to 2304 per 1,000,000 living among males and to 1635 per 1,000,000 among females. Speaking generally, the mortality from these diseases is heaviest among young children, especially those of the male sex. Thus in the seven years now referred to it amounted to 4401 per 1,000,000 boys living under five years of age and to 3556 per 1,000,000 girls living at the same age. At no other period of life does the mortality approach this figure. Comparing the mean rates of death from tuberculosis in the last seven years with the corresponding figures in the 10 years 1861–70 it appears that a very considerable decrease has occurred in the later period, the decrease being greatest among females. The proportion which the deaths from tuberculous diseases bear to the total mortality varies enormously at different stages of life; thus we find that whilst among children under five years old the proportion does not exceed 8 per cent. it amounts to more than 41 per cent. at ages from 15 to 35 years.

C.—Mortality from Tuberculous Meningitis at Specified Ages, in Several Periods, from 1851 to 1897.

	Periods.	Deaths in 1,000,000 births.					Deaths in 1,000,000 living.										
		Under 1 year.	1-	2-	3-	4-	Total under 5 years.	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	All ages.
Males.	1851–60	4665	3632	1550	847	636	2915	396	105	31	12	7	7	7	8	8	10	464
	1861–70	4239	3102	1288	731	519	2578	326	93	20	9	5	3	2	2	3	2	412
	1871–80	3651	2670	1096	631	487	2242	331	119	48	25	17	12	6	4	2	1	377
	1881–85	2804	2077	920	561	442	1750	327	114	58	34	21	12	9	4	1	1	305
	1886–90	2639	1912	857	541	400	1627	312	116	53	32	21	12	10	4	2	3	276
	1891–95	2511	1759	857	520	408	1530	284	114	61	35	24	18	9	7	4	—	256
	1896	2279	1499	823	535	427	1375	276	96	58	37	23	16	12	9	—	—	233
	1897	2293	1594	844	499	331	1371	263	109	59	41	28	18	13	6	—	—	234
Females.	1851–60	3352	2736	1279	807	578	2162	331	98	30	8	6	4	5	5	7	7	334
	1861–70	2974	2267	1045	625	447	1847	256	85	22	8	4	3	2	2	2	1	285
	1871–80	2504	1846	859	544	426	1559	272	116	49	23	15	10	5	4	3	1	261
	1881–85	1951	1509	738	509	409	1261	296	123	62	29	17	13	6	3	1	—	224
	1886–90	1856	1357	714	505	383	1190	295	131	60	32	21	11	7	3	2	—	208
	1891–95	1819	1385	716	521	389	1165	273	120	63	34	24	12	8	4	3	1	199
	1896	1650	1195	734	548	451	1081	252	116	75	49	22	14	6	5	5	0	188
	1897	1812	1391	753	483	376	1133	251	116	62	38	27	10	9	5	2	—	193

D.—Mortality from other Forms of Tuberculosis, Scrofula, &c., at Specified Ages, in Several Periods, from 1851 to 1897.

	Periods.	Deaths in 1,000,000 births.					Deaths in 1,000,000 living.										
		Under 1 year.	1-	2-	3-	4-	Total under 5 years.	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	All ages.
Males.	1851–60	497	315	182	128	106	314	144	164	185	183	145	104	111	123	162	110	167
	1861–70	810	447	190	115	92	432	112	117	116	93	71	54	66	93	115	69	138
	1871–80	1045	582	232	134	102	551	83	68	71	54	37	30	39	54	73	37	125
	1881–85	1264	727	296	163	148	689	125	101	114	99	73	70	70	76	58	22	169
	1886–90	1712	904	338	190	164	846	123	108	115	118	91	83	87	82	77	38	196
	1891–95	1772	915	363	199	144	859	152	123	133	142	111	104	107	102	85	51	213
	1896	1301	817	360	195	164	724	150	101	140	157	119	122	106	135	68	41	200
	1897	1479	797	333	194	135	725	125	107	113	138	126	122	113	119	90	104	195
Females.	1851–60	431	309	162	121	94	275	107	118	131	100	94	88	86	117	129	10	127
	1861–70	700	429	190	117	92	384	78	82	87	63	49	51	59	72	84	72	108
	1871–80	924	530	214	128	94	477	62	51	50	34	27	28	37	51	67	35	100
	1881–85	1076	669	269	174	140	574	121	109	117	86	71	62	50	54	51	45	148
	1886–90	1336	822	320	205	132	689	135	124	120	100	81	70	55	57	52	39	166
	1891–95	1490	815	333	169	154	716	141	127	141	107	92	86	66	69	72	68	176
	1896	1203	695	327	178	161	606	99	113	133	105	101	93	69	94	69	51	160
	1897	1189	580	287	174	165	564	115	101	132	107	104	91	79	63	86	97	156

PHTHISIS.

In Table A the average mortality caused by pulmonary phthisis is given for groups of years from 1851–60 down to 1897, and as the mortality of the two sexes varies so widely the death-rates are here given separately for males and females; the phthisis mortality for persons of both sexes is omitted from the tables. In the seven years ending with 1897 phthisis caused a mortality at all ages equal to 1598 per 1,000,000 among males and to 1259 per 1,000,000 among females. Comparing this period with the 10 years ending with 1870 the table shows that among persons at all ages and of each sex the mortality from phthisis has decreased very considerably, but that among females the decrease has been much greater than among males. The aggregate phthisis mortality of females in 1891–97 was scarcely more than half of what it had been in 1861–70; among males the decrease amounted to rather more than one-third. At ages under 15 years the mortality from phthisis is comparatively slight, the rates for the first three quinquennia of life ranging from 182 to 450 per 1,000,000 among boys and from 244 to 523 per 1,000,000 among girls. According to the experience of the last few years the real liability to fatal phthisis begins at the age group 15 to 20 years, when the male rate stands at 1033 and the female rate at 1361. At the age-group 35 to 45 both the rates attain their maximum—viz., 3209 for males and 2248 for females. After this age they decline in each case.

Females seem to be rather *less liable* than males to death from phthisis at the age 0 to 5 years, *more liable* at the age 5 to 20 years, and again *less liable* at ages above 20 years.

Tendency to fatal phthisis commences somewhat earlier in females than in males. The maximum mortality is reached at the same age-group (35 to 45) in both cases, at which time of life the rates are 3209 for men and 2248 for women; but whilst the male rate continues at almost the same point (falling only to 3172 per 1,000,000) throughout the 45 to 55 age-group, the female rate declines to 1693 per 1,000,000 at that age-group, or more than a fourth of the rate obtaining at the age-group immediately preceding. Table A shows that if the phthisis death-rates in the last seven years are compared with those in 1861-70 it is in the earlier stages of life more especially that the reduction has taken place, although there has been a fall in the mortality at every age-group. For example, among males the reduction at the several age-groups from infancy to the twenty-fifth year has ranged between 49 and 60 per cent., and among females from infancy to the thirty-fifth year it has ranged from 49 to 58 per cent. At ages beyond the thirty-fifth year the reduction in mortality from this disease has been less, but it has been much greater among females than among males, the difference being observable up to the more advanced ages. The changes in the incidence of phthisis in the two sexes at the several age-groups are remarkable. In 1861-70 the mortality from this disease was higher among females than among males at all age-groups between five years and 35 years, the mortality of males being the higher at ages under five and over 35 years. In 1891-97, on the other hand, the period of life during which females were more liable than males to die from phthisis extended from age five to age 20 only, the mortality of males being the greater at ages under five and at all ages above 20. It has already been stated that the age of maximum phthisis mortality is at the present time from the thirty-fifth to the forty-fifth year both among men and among women, but this has not always been the case. In the 1851-60 period, for example, the age of greatest mortality was 20 to 25 years for males and 25 to 35 for females. The age of maximum phthisis mortality has therefore been postponed in both sexes. In other words, either the saving of life has been greater at the ages formerly most susceptible to phthisis than at the ages immediately following, or persons specially liable to phthisis have lived somewhat longer than they would have done under earlier conditions.

The sixtieth annual report of the Registrar-General which has just been issued contains a paragraph concerning the phthisis mortality of the metropolis which is of considerable interest in the present connexion; we therefore quote it *in extenso*. "Although phthisis mortality at all ages both among males and among females is higher in London than the average in the extra metropolitan portion of England and Wales, nevertheless females of from 15 to 25 years of age die from this malady much less rapidly in London than they do in the provinces—i.e., England and Wales less London. On examining the records of earlier years it is found that this phenomenon is by no means new. It has therefore been deemed advisable to examine the subject more in detail. Accordingly the rates of mortality from phthisis in London and in the provinces have been extracted for the last three decennia at four groups of ages and the figures for 1891-97 have been calculated for purposes of comparison. (The results are shown in a table.) Taking females first, it appears that throughout the four age groups from 10 years to 35 the phthisis mortality of young women in London is below that in the provinces, and that this is especially the case at ages from 15 to 25 years. The excess in the fatality of phthisis in the provinces, as compared with London, is becoming less as time goes on; thus in the ten years 1861-70 the phthisis mortality among girls in London from 10 to 15 years old was less than that of girls in the provinces at the same ages by 26 per cent., whilst in the seven years ending with 1897 the difference was only 22 per cent. At ages 15 to 20 years the differences were respectively 41 and 31 per cent., and at ages 20 to 25 years they were 37 and 31 per cent. respectively. But further, the table shows that the disparity referred to is not confined to the female sex, for, although in a less degree, the same peculiarity is found to attach to young males in London who die from phthisis less rapidly than do the same class in the provinces. If, therefore, the death-rates are to be trusted it would seem that for some cause hitherto unexplained young people of both sexes (although in different degree) die of phthisis in the extra metropolitan portion of England and Wales much more rapidly than they do in London."

TABES MESENTERICA.

This is a time-honoured term, under which are probably included, in addition to tuberculous affections of the mesenteric glands, peritoneum, and intestines, a considerable but unknown number of ill-defined ailments in which wasting and diarrhœa are prominent symptoms. This disease in its fatal form affects young children almost exclusively (see Table B.). Among infants under one year the mortality is very high; in the seven years just ended it averaged 4278 per 1,000,000 births among males and 3454 per 1,000,000 among females, and the greater part of this mortality appears to fall on infants aged from three to six months. In the second year of life the mortality is still very high, but it is still less than half the rate obtaining in the first year of life. Male infants at this early age die from tabes mesenterica faster than females and the same is true of children aged from 0 to 5 years whose death-rate amounts to 1646 per 1,000,000 living amongst males and to 1332 per 1,000,000 amongst females. Comparing the period 1891-97 with the decennium ending with 1870 there has been a reduction in the mortality at all ages from this disease averaging about 23 per cent. in both sexes. Among male children under five years the reduction has been equal to 17 per cent. and among female children to 22 per cent.

TUBERCULOUS MENINGITIS (HYDROCEPHALUS).

The mortality from tuberculous meningitis like that from tabes mesenterica is mainly confined to the periods of infancy and early childhood, by far the greater part of it taking place within the first two years of life. Unlike that from tabes mesenterica the mortality from this disease within the first year of life falls most heavily on infants over six months old. During the seven years 1891-97 the deaths caused by tuberculous meningitis corresponded to a rate of 250 per 1,000,000 at all ages for males and of 196 per 1,000,000 for females. Among children up to five years of age this disease is much more fatal to males than to females. At ages under one year male infants died in 1891-97 at the rate of 2446 per 1,000,000 births and female infants at the rate of 1795 per 1,000,000; these figures, however, show a considerable decrease as compared with the mortality in earlier years. The mortality from tuberculous meningitis among boys at ages below five years was equal to 1485 per 1,000,000 living and among girls at the same age to 1149 per 1,000,000. In comparing the mortality from this disease in the last seven years with that obtaining in 1851-60 we find that a steady decline has taken place in the case of children of both sexes under the age of five years, but at most of the ages above 10 years there was a marked increase in the mortality of the 1871-80 period which has been maintained since that date. This increase was accompanied in 1871-80 by an equally marked decrease in the mortality referred to "tuberculosis," pointing to changes of classification or of nomenclature, some deaths which formerly would have been included with other undefined forms of "scrofula" having apparently been classed under the head of "tuberculous meningitis."

"SCROFULA" AND OTHER FORMS OF TUBERCULOSIS.

This is a very indefinite and unsatisfactory section, which is, perhaps, little otherwise than an overflow from the other and larger sections of the tuberculous group of diseases. Table D shows that the mortality from "scrofula" at all ages is still inconsiderable although it has increased somewhat during the last half century. At most of the ages dealt with in the table males die from "scrofula" more rapidly than females and the mortality is mainly confined to the earlier years of life. There is little doubt that the increase which has been observed in the mortality due to "scrofula" is apparent merely and is due to the transference to this class of deaths which in former years would have been classified otherwise.

On carefully weighing the evidence supplied by Dr. Tatham to the Royal Commission on Tuberculosis, together with that published subsequently, we are led to agree with him that there has been a substantial and for the most part steady diminution in the mortality attributed to tuberculous diseases in England and Wales during the last 47 years. He is, however, probably justified in cautioning his readers against attempting to estimate too closely either the *amount* or the *proportion* of decrease which the tables show to have taken place since that date.

PLAGUE IN BOMBAY.[1]

A VERY complete report of the plague epidemic in Bombay during 1897 has been issued by the Vienna Commissioners. The report is in two large volumes and this the first volume is a quarto containing two parts. It may, however, be conveniently divided into three, the first section consisting of 13 pages and five photoprints, by Dr. H. Albrecht, being General Remarks; the second is the Scientific Report of Clinical Observations, by the late lamented Dr. H. F. Müller; and the third, on Pathological Anatomy and Etiology of the Plague, is by Dr. Anton Ghon and Dr. Rudolf Pöch.

In Part I., the General Remarks and History and Objects of the Commission, Dr. Albrecht states: Apart from the short reports of Yersin and Kitasato upon the plague in Hong-Kong, in which they describe a concurrent discovery of the etiology and nature of the disease in question, there appeared of late only the work of Aoyama, giving clinical and anatomical information regarding the epidemic. The above treatises, however, did not exhaust the subject. The Austrian Commission had an extensive field before it and the members felt at the very onset that although they had no prospect of bringing out epoch-making discoveries their duty lay in working hard at scientific details which would to a certain extent clear up several points still enveloped in obscurity. Four members constituted the Austrian Plague Commission, selected by the Vienna Imperial Academy, and were provided with the following instructions: Dr. Herman F. Müller to study the epidemic clinically; Dr. Heinrich Albrecht and Dr. Anton Ghon to inquire into the pathological anatomy and etiology, also the epidemiological nature of the bubonic plague; and Dr. Rudolf Pöch to render assistance generally as occasion required. The Commission, fully equipped, embarked on Feb. 3rd, 1897, at Trieste, on the Lloyd steamer *Imperator*. This was the first foreign mission which started for the investigation of the plague for Bombay; later, the German and Russian Governments took similar steps for the same purpose. The steamer reached Bombay on Feb. 20th, 17 days after leaving Trieste. On landing the first object of the Commissioners was to be introduced to the authorities and to establish themselves in a proper locality for laboratory work. This was found in the Elphinstone High School, a great monumental building in the centre of the city. A good many drawbacks were experienced by the Austrian savants not accustomed to the climatic conditions of the tropics. The temperature, the glaring light, and particularly the dust were serious impediments to minute investigations in the laboratory. On the third day after their arrival the Commissioners, accompanied by Surgeon-Colonel Weir, visited the Parel and the Arthur-road Hospitals and begged to be allowed to commence their studies in the latter. "To Dr. Weir's courtesy and kindness," Dr. Albrecht says, "we are indebted that by Feb. 23rd we were able to commence clinical investigations. Dr. Choksy, the second health officer of Bombay, promised to supply us with subjects for post-mortem examinations." On Feb. 29th the first examination on the dead body was made at the Arthur-road Hospital. As mentioned already, the task of clinical examination fell to Dr. Müller's province. He found the Sisters of Mercy employed in nursing; later the Commission engaged a special lady nurse, Miss Elva May Fern, Pandarhinath being the hospital assistant. Regarding Miss Fern Dr. Müller declares (p. 4) that the success of his clinical studies was chiefly due to her exertions.

The patients were mostly Hindoos, very few Mahomedans or native Christians. At the commencement difficulties were met in carrying out the details of a thorough clinical examination. "It was not customary at this hospital to use percussion or the stethoscope and as we did so we seemed to incur the charge of unnecessary cruelty to the patients; we could not therefore rely on the nursing staff for assistance in this matter." There was, moreover, a general ill-feeling and opposition among the natives to treatment in the hospital and to all sanitary measures of the Government. Another circumstance which the Commissioners had to take into consideration was the great mortality at the end of February and beginning of March, when many persons died within 24 hours after admission. The material, therefore, accumulated in such a manner as to oblige the Commissioners to remain at their work from morning till night, "without giving ourselves time to take our meals; the first 14 days, therefore, of our hospital work was an exciting and a wearying period" (p. 4). "The post-mortem room was not all that could be desired—indescribably hot when closed and draughty when open, interfering with bacteriological research, the water-supply insufficient, the blood from the post-mortem table trickled down, and we stood for hours on the sloppy earth floor. Notwithstanding every precaution our clothing became wet with blood. Yet we escaped infection owing to the painfully scrupulous (*peinlich genau*) disinfection we practised by means of the sublimate, after each examination, both on our person and clothing. Of abundance of post-mortem supply Dr. Bitter of Cairo had a share also."

When the German Plague Commission arrived on March 8th and the Russian on the 15th the Austrians were already in possession of considerable clinical, anatomical, and pathological records and in a position to draw conclusions from their own experience.

Notwithstanding the distressing climatic and other drawbacks, assisted by Stöbich, their laboratory man, the Commissioners worked without intermission from Feb. 24th to April 24th. They express gratitude to General Gatacre (the chairman of the Plague Committee), to Dr. Choksy, and to his Hindoo assistant, Pandarhinath, for abundant supply of material. The state of health of the Commission was on the whole satisfactory; they noticed, however, enlarged and painful glands in the axilla which continued long after their return to Europe; one of the Commissioners suffered from the effects of the sublimate. On April 22nd the Commission began to prepare for a return voyage, and embarked on May 1st on the same steamer (the *Imperator*) by which they came to Bombay two months before. When arriving in Vienna the Commission had hoped to obtain a sufficiently commodious locality to enable them to work up in comfort the details of the valuable data which they had collected in Bombay, especially as they felt it to be of importance to safeguard themselves and their *entourage* from danger of infection with the plague poison. "Unfortunately," continues the report, "it was not possible to secure a laboratory answering the most necessary hygienic requirements" (p. 12); and whilst the Commission express gratitude to the Anglo-Indian authorities and the medical staff at Bombay for readiness to assist them they complain of not having obtained from the Austrian Consul-General there that courteous treatment to which they thought themselves entitled.

In Part II., the Clinical Report, the standpoint from which Dr. H. F. Müller starts in his endeavour to present a clinical sketch of the bubonic plague is the result of observations on several hundred patients in Bombay, of which he most elaborately records some 80 cases. He does not pretend to have attained completeness in his reports, acknowledging that important phases, complications, and abnormal conditions of the development of the disease may have entirely escaped his observation. His records are based entirely on what he saw at the bedside and particularly on the pathological, histological, and bacteriological observations of all the Commissioners who invariably communicated to each other their individual results, thus making the value of the report so much the greater. Dr. Müller begins with the general view of the bubonic plague as described by Griesinger and Liebermeister and gives an account of premonitory and general symptoms, referring to cases in his special and elaborate report, devoting to some—as, for instance, to Esser Bahr (p. 50)—four closely printed quarto pages in small type. He enters fully into the study of primary and secondary glandular swellings, their course, locality, and importance. The most dangerous he considers to be the axillary buboes; next come those in the cervical region near the maxillary angle where the course of the disease is short, death ensuing rapidly owing to pressure on the respiratory organs. Secondary buboes are the result of metastasis, the poison affecting the circulating fluids. It was noticeable that in cases of primary pneumonia proved by bacteriological evidence in the sputum there hardly ever occurred secondary

[1] Über die Beulenpest in Bombay im Jahre 1897. Gesammtbericht der von der Kaiserlichen Akademie der Wissenschaften in Wien, zum Studium der Beulenpest nach Indien" entsendeten Commission. Theile I. und II. A. Mit 5 Lichtdrucken und 36 Curventafeln. In Commission bei Carl Gerold's Sohn, Buchhändler der Kaiserlichen Akademie der Wissenschaften. Wien. 1898. (On the Bubonic Plague of Bombay in 1897. A Joint Report of the Commissioners sent to India by the Imperial Academy of Sciences of Vienna to Study the Bubonic Plague. Parts I. and II. A. Vienna: Carl Gerold's Son. 1898.)

bubonic swellings. As to the general nature of glandular enlargements Dr. Müller's observations show that in a great number of cases the buboes receded without suppurating and that there were cases of undoubted suppuration without feverish symptoms.

The cases of carbuncle Dr. Müller arranges in two classes—those developed in patients already affected with bubonic swellings and those in whom the carbuncle seems to appear as a primary symptom; but whether primary carbuncles really exist he does not venture positively to assert (p. 167). Cases of lymphangitis, affections of the throat, and diphtheritis have been observed—the latter always first. Painful affections of the joints have also occurred, particularly in the patient De Souza whose case is given at page 171, suffering from distressing swellings of the shoulder, elbows, hand, and finger-joints.

Many details are recorded as to the course of the fevers. A few cases ended in recovery. The duration of pyrexial symptoms varied between six and 28 days, the type being remittent, seldom continued. The temperature at the outset ranged between 30° and 40° C., the fall setting in gradually. Bubonic cases free from fever Dr. Müller did not see, but there were some in which the temperature never rose above 38·1° ending in recovery.

It is of the highest importance that the powers of the circulatory organs should be maintained; the fatal issue in most cases is owing to the weakness of the central organ.

In every case respiration is quickened; in some it rose to 70. In bronchitic cases cough was always present. The most important chest affection in bubonic plague is pneumonia, an almost fatal type of the disease. It was described clinically for the first time by Surgeon-Captain L. F. Childe, I.M.S., Professor of Pathological Anatomy in Bombay, showing that the primary infection by the plague poison occurred through the respiratory tract. Griesinger and Liebermeister mention pneumonia as a sequela of the bubonic plague. Only primary pneumonia is capable of being made out during life. Early production of cultures of plague bacilli from the patient's sputum is of the highest importance, because if glandular swellings are absent, as is almost invariably the case in primary pneumonia, no positive evidence is apparent to lead to a reliable diagnosis. Percussion gives no decisive indication and the stethoscope may discover in some places sharp vesicular or bronchial breathing or rhonchus in the vicinity of the air-pipes. Secondary pneumonia can be discovered only after death.

With regard to digestion, the tongue, as a rule, is covered with a thick white fur; there is enlargement of the tonsils and the pharynx is darkened; there are frequent flatulence and hiccough towards the end. The liver is somewhat enlarged. No traces of icterus or of bile in the urine were observed. The spleen is always enlarged.

As to the nervous system, the symptoms seem to be more functional than organic, owing to the plague toxin in the system:—painful headaches, often frightful (*furchtbar*) attacks of vertigo, vomiting, and general affection of the sensorium manifesting itself in drowsiness and ending in coma. The "enormous" acceleration of the pulse is doubtless owing to paralysis of the vagus. Cerebral symptoms are often present in great intensity. Cramps in different parts of the body are noticed, sometimes three days before death, and there were indications of meningitis, but on post-mortem examination such supposition was not verified. The conclusion is that it was owing to toxic influence.

The Commissioners had great difficulty in obtaining specimens of urine in sufficient quantity for examination. The result showed an abnormally low specific gravity; in one case only it stood at 1026; in most other cases it was under 1020, sometimes as low as 1010; this was attributable to a certain extent to the large quantity of water drunk to quench the thirst. Albumin was always present; in favourable cases sero-albumin and afterwards the nucleo-albumin gradually disappeared. Sugar (by Frommer's test) was not discovered. Acetic acid was present only in two cases; there were traces of indican; blood was seen very seldom, but almost always it was a fatal sign. Bile was never discovered; retention of urine necessitating the use of a catheter occurred very seldom. At pages 203 and 204 there is a full and laborious analysis of blood furnished by Dr. Rudolf Pöch, giving the number and measurements of hæmoglobulin, erythrocytes, and leucocytes.

With regard to the duration of the disease, of the 48 fatal cases reported by Dr. Müller death occurred between the first and the eighteenth day of the disease. The largest number died on the fourth day—viz., 14·6 per cent.—and the smallest on the eighteenth—viz., 2·1 per cent. In protracted cases of illness death takes place not from the plague poison but from exhaustion, "pest marasmus" (Dr. Albrecht and Dr. Ghon). The largest number of deaths occurs within the first eight days of the illness; when the eighth day is passed it is considered a favourable sign. As a sequela Dr. Müller found in a large number of convalescents heavy apathy bordering on complete dementia and in one case acute ataxy. No relapse occurred.

(To be continued.)

ARMY MEDICAL REPORT FOR 1897.

CONCLUDING NOTICE.[1]

CONSIDERING the wide field—conterminous with that over which the British Army is spread—the statistical tables and reports from different commands and stations at home and abroad and the various papers and articles grouped together in the Appendix, the reviewer of so voluminous a report as that with which we are dealing is necessarily somewhat embarrassed in selecting subjects for his observation and comment. He must perforce confine himself to a few and his selection perhaps may not commend itself to his readers as the best.

Speaking of enteric fever among the troops serving in the United Kingdom a remark is made, *à propos* of some outbreaks of this fever where definite causes of the disease were ascertained to exist inside the barracks, to the effect that where such is the case a more or less numerous crop of cases arises, whereas isolated cases are probably contracted outside the barracks. This may no doubt be generally accepted as true and as applicable to stations abroad as well as to stations in this country. The well-nigh universal prevalence of enteric fever among our troops serving in India renders it very difficult, it may be remarked, to trace out the definite cause of this fever in numerous instances. Where a number of cases occur within a given time and group themselves together or follow one another in some sort of sequence the medical history makes up a consistent narrative indicative of some community of cause. We are able in such cases to demonstrate that outbreaks of enteric fever are capable of being explained exactly in the same way in India as they are in this country, but the subject becomes a far more complicated one for investigation when we are told, as in the report under review, that in 1897 this fever occurred in every district except Aden, and in all but 17 stations and under all sorts of etiological and other conditions. This pre-supposes that the typhoid bacillus which is believed to be its essential cause must be almost universally present, although it cannot always be discovered; and its detection, moreover, often follows at so late a date as to deprive it when made of any practical utility in the way of application at the time when the disease is actually prevailing.

In the Principal Medical Officer's report on the sanitary conditions of Malta we find that at Imtarfa the barracks are new and considered satisfactory with the exception of the bath accommodation, the distance from the sea preventing men bathing. An outbreak of enteric fever was suspected to have been caused by pollution of water in the large reserve tank, which is an underground tank near the latrines with considerable facilities for dust, &c., being blown into it. A chemical analysis was made of the water but no definite evidence of pollution was ascertained. Bacteriological examination, however, detected the presence of the bacillus coli and the use of the water was discontinued in November. The tank was emptied, cleansed with quick-lime (30 grains to the gallon), and flushed with spring water, and in reporting on the result the medical officer in charge writes that "within three weeks the cases of enteric fever, Mediterranean fever, diarrhœa, dysentery, and jaundice, which prevailed during the autumn, ceased, and the Border Regiment, which is composed of extremely young men, has not furnished a single case of fever, diarrhœa, dysentery, or jaundice since its arrival at Imtarfa on Nov. 19th to the date of writing (Jan. 20th, 1898); whereas last year

[1] The previous article appeared in THE LANCET of March 11th, 1899.

amongst the seasoned soldiers of the Royal Lancaster Regiment cases of fever and diarrhœa occurred at intervals throughout the winter." This at first sight looks like cause and effect but the time over which the immunity has lasted in the one case and the medical history of the regiment in the other as here stated are obviously insufficient to warrant any definite conclusion being drawn.

Touching on the subject of the provision made for soldiers' baths we notice that the Principal Medical Officer states that at Verdala the bath accommodation is considered inadequate and the dual water-supply system objectionable, as taps for drinking-water and ablution-water are close together. From what we know of soldiers' habits we should say that no affixed notices or labels will obviate the risk where such is the case. As regards bath accommodation for soldiers serving at home or in temperate climates warm water should be laid on and made available for them during the cold seasons of winter and spring at any rate. Every soldier should have the opportunity of having a warm bath once a week for the sake of personal cleanliness and hygiene.

This volume for 1897, we may parenthetically remark, contains a long and excellent topographical and sanitary report on Crete following that on Malta. We notice that at St. George's, Bermuda, the sanitary improvements effected in regard to the water-carriage system of sewage disposal have been practically completed. The system is flushed by automatic flushing-tanks. An almost total disappearance of typhoid fever has, we are told, followed. Why cannot similar works be carried out elsewhere in the island of Bermuda which, with plenty of sea-water available and the sea itself for disposal of sewage, should, it would be imagined, afford favourable conditions for sanitary engineering work?

The report on the health of the European troops serving in India is of an exhaustive and elaborate character. The average strength of these troops, exclusive of those employed in the North-Western Frontier expeditions, the statistics of which are not included in this report, was 64,531, as compared with an average strength of 70,484 in 1896. Enteric fever caused 2050 admissions to hospital, 556 deaths, and a constant sickness of 296·85 men, being in the ratios of 31·8, 8·62, and 4·60 per 1000 respectively. Cholera was not unduly prevalent, the rate being lower than the average rates for the previous 10 years. Out of 116 admissions and 80 deaths there were 65 cases and 40 deaths at Sitapur in a very severe epidemic which occurred in that garrison between Sept. 10th and 17th. A large proportion of those attacked were members of the Army Temperance Association, and the cholera microbe, we are told, was detected in several articles of food and drink found in the room of this association on the morning after the outbreak, but not in the drinking-water of the station. We need not allude to the inefficiency and loss to the service caused by venereal diseases in India, for that has been already dwelt upon. In the Appendix will be found a long article by Surgeon-General Gore, the Principal Medical Officer of Her Majesty's Forces in India, embodying a summary of operations on the North-West Frontier, together with a very good report of the Surgical History of the Tirah Expeditionary Force in 1897–98, by Lieutenant-Colonel H. R. Whitehead of the Royal Army Medical Corps.

This brings us to the Appendix which leads off with a report on the Progress of Hygiene for the Year 1898 by Colonel J. Lane Notter of the Royal Army Medical Corps, the Professor of Military Hygiene at the Army Medical School, Netley. These contributions to the yearly departmental volume are most useful; they are written in a concise analytical style and afford an excellent summary of the chief points which have attracted attention during the year under review. Interesting and practical papers from the Professors of Military Surgery and Medicine respectively at the same institution, with clinical record of cases at the Royal Victoria Hospital, follow Professor Lane Notter's report, together with contributions from Major W. G. Macpherson of the Royal Army Medical Corps on the Sixth International Conference of the Red Cross Societies and the Ninth International Congress of Hygiene and Demography, at both of which he was a delegate. In the latter Major Macpherson, referring to some of the more important papers read in different sections of the congress, says that a point of special interest to our Army Medical Service was the recognition of the fact that the germs of such diseases as typhoid and Mediterranean fevers may be present in the urine long after convalescence, but the practical difficulties of dealing with this form of distribution of disease are acknowledged to be very great at present. A statement made by Löffler regarding the bacillus of diphtheria is also of special interest—viz., that many bacilli existed identical morphologically and in culture reaction with the pathogenic diphtheria bacillus, but that it is impossible to determine by ordinary microscopic or culture examination whether they are the bacilli of true diphtheria or not. The only certain method of doing so is by inoculating animals. This has considerable bearing upon recent extensive and mild epidemics of so-called diphtheria in the Belfast and Aldershot garrisons, where the disease was diagnosed by bacteriological methods which apparently did not include inoculations into animals. A description is also given in Major Macpherson's paper in question of the work done by the Spanish Army Medical Service in Cuba and of the enormous amount of sickness and mortality which occurred among the Spanish troops during two and a half years, together with a table showing the admissions and deaths from yellow fever during the war and a monthly one from 1880 to 1897.

The Army Medical Report for 1897 is a good one and reflects credit upon the Army Medical Service of this country.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 7623 births and 4267 deaths were registered during the week ending Saturday last, April 15th. The annual rate of mortality in these towns, which had been 23·1 and 21·7 per 1000 in the two preceding weeks, further declined last week to 19·5. In London the rate was 18·6 per 1000, while it averaged 20·1 in the 32 provincial towns. The lowest death-rates in these towns were 11·2 in Cardiff, 13·0 in West Ham, 14·3 in Croydon, and 16·6 in Leeds; the highest rates were 24·7 in Liverpool, 26·4 in Wolverhampton, 27·1 in Brighton, and 28·3 in Manchester. The 4267 deaths in these towns included 379 which were referred to the principal zymotic diseases, against 401 and 379 in the two preceding weeks; of these 126 resulted from whooping-cough, 98 from measles, 55 from diphtheria, 37 from "fever" (principally enteric), 34 from scarlet fever, 27 from diarrhœa, and two from small-pox. The lowest death-rates from these diseases were recorded in Brighton, Wolverhampton, Derby, and Newcastle-upon-Tyne; and the highest rates in Bolton, Salford, Burnley, and Manchester. The greatest mortality from measles occurred in Bolton and Manchester; from scarlet fever in Halifax and Bradford; and from whooping-cough in Plymouth, Cardiff, Birkenhead, Burnley, Oldham, and Huddersfield. The mortality from "fever" showed no marked excess in any of the large towns. The 55 deaths from diphtheria included 20 in London, seven in Sheffield, four in West Ham, four in Liverpool, three in Portsmouth, and three in Leeds. Two fatal cases of small-pox were registered in Hull, but not one in any other of the 33 large towns, and three small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, April 15th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2126, against numbers declining from 2584 to 2234 on the six preceding Saturdays; 163 new cases were admitted during the week, against 177, 167, and 150 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 505 and 470 in the two preceding weeks, further declined to 343 last week, and were 28 below the corrected average. The causes of 59, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Bradford, Leeds, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Huddersfield, Sheffield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns which had been 22·3 and 21·8 per 1000 in the two preceding weeks, further declined to 19·3 during the week ending April 15th, and was slightly below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·2 in Paisley and

17·9 in Edinburgh to 24·8 in Aberdeen and 27·1 in Perth. The 589 deaths in these towns included 16 which were referred to whooping-cough, 13 to measles, 11 to diarrhœa, seven to scarlet fever, five to "fever," and two to diphtheria. In all 54 deaths resulted from these principal zymotic diseases, against 97 and 79 in the two preceding weeks. These 54 deaths were equal to an annual rate of 1·8 per 1000, which was slightly above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 30 and 23 in the two preceding weeks, further declined to 16 last week, of which five occurred in Leith, three in Glasgow, three in Edinburgh, and three in Dundee. The 13 deaths referred to measles also showed a further decline from recent weekly numbers and included eight in Glasgow and three in Aberdeen. The fatal cases of scarlet fever, which had declined from six to three in the three preceding weeks, rose again to seven last week, of which three occurred in Glasgow and two in Edinburgh. The five deaths referred to different forms of "fever" exceeded the number recorded in any recent week and included two in Dundee. The two fatal cases of diphtheria occurred in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 160 and 144 in the two preceding weeks, further fell to 136 last week, and were 28 below the number in the corresponding period of last year. The causes of 22, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 31·6 and 32·8 per 1000 in the two preceding weeks, further rose to 33·4 during the week ending April 15th. During the past four weeks the rate of mortality in the city has averaged 32·4 per 1000, the rate during the same period being 21·2 in London and 19·8 in Edinburgh. The 224 deaths registered in Dublin during the week under notice showed a slight increase upon the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against 12 and 15 in the two preceding weeks; of these, four resulted from whooping-cough, four from "fever," and two from diphtheria, but not one from small-pox, measles, scarlet fever, or diarrhœa. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·5 in London and 1·4 in Edinburgh. The fatal cases of whooping-cough, which had been three and five in the two preceding weeks, declined to four last week. The deaths referred to different forms of "fever," which had been two and five in the two preceding weeks, fell to four last week. The two fatal cases of diphtheria were within one of the number recorded in the preceding week. The 224 deaths in Dublin last week included 37 of infants under one year of age and 65 of persons aged upwards of 60 years; the deaths of infants showed an increase, while those of elderly persons were slightly below the number in the preceding week. Seven inquest cases and three deaths from violence were registered; and 82, or more than a third, of the deaths occurred in public institutions. The causes of 12, or more than 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF SURGEONS: E. Ferguson and Alexander Martin French to be Fleet Surgeons.

The following appointments are announced:—Staff Surgeons: G. Wilson to the *Fearless*; F. J. Lilly to the *Forte*; E. Corcoran to the *Resolution*; E. H. Williams to the *Impregnable*; E. R. Dimsey, D.S.O., to the *Alexandria*; F. A. Brice to the *Psyche*; W. W. Pryn to the *Champion*; J. M. France to the *Lion*, temporary; W. Spry to the *Edgar*, for the *Royal Sovereign*; and R. E. Biddulph to the *Edgar*, for the *Royal Sovereign*. Surgeons: A. C. Bean to the *Forte*; H. E. Fryer to the *Partridge*; A. G. W. Bowen to Plymouth Division (Royal Marines); E. A. Penfold to the *Vivid*; H. L. Norris to the *Jason*; J. McElwee to the *Medusa*; D'A. Harvey to the *Pomone*; J. H. Acheson to the *Excellent*; F. C. Stearn to the *Royal Sovereign* and to the *Edgar*; H. Spicer to the *Edgar*; and S. H. Facey to the *Jackal*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant L. E. L. Parker is ordered to proceed to Aldershot for a course of instruction at the Depôt of the Royal Army Medical Corps. Lieutenant R. H. Lloyd, proceeds to Netley for duty. Colonel T. J. Galwey, C.B., relinquishes the appointment of Principal Medical Officer of the Egyptian Army. Lieutenant-Colonel W. W. Kenny joined at Dublin for duty. Lieutenant-Colonel P. B. Tuthill, retired pay, A.M.S., is selected as a retired officer for appointment to the medical charge of the troops at Chichester, in succession to Lieutenant-Colonel J. M. Percival. Lieutenant-Colonel J. Stevenson, retired pay, A.M.S., is appointed to the medical charge of troops at Berwick-on-Tweed. Captain G. M. Pilcher proceeds to Woolwich for duty. Lieutenant-Colonel C. H. Swayne, D.S.O., and Major G. T. Trewman have been granted leave from India to England for six months.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-General W. Taylor, C.B., A.M.S., to be Principal Medical Officer, Her Majesty's Forces in India, vice Surgeon-General A. A. Gore, A.M.S., who has retired. The services of Lieutenant W. J. Niblock (Madras) are placed temporarily at the disposal of the Government of Madras.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant J. A. Clark to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 1st Cheshire and Carnarvonshire: Thomas Gidson Lusk to be Surgeon-Lieutenant. *Royal Engineers* (Volunteers): 2nd Gloucestershire (the Bristol): Thomas Carwardine to be Surgeon-Lieutenant. *Rifle:* 1st (Ross Highland) Volunteer Battalion, Seaforth Highlanders (Rossshire Buffs, the Duke of Albany's): John Cameron to be Surgeon-Lieutenant.

THE CAMPAIGN IN THE PHILIPPINES.

The news from the Philippines is no doubt disconcerting for it shows that the task which the Americans set themselves to accomplish is likely to be much harder and longer than was anticipated. But the pendulum of public opinion sways easily from the side of elation to that of gloom, especially where political sentiment is divided and political capital may be made out of war news. The obstacles and difficulties which the Americans are now facing are such as this and other countries have had to encounter before now and have in the end overcome. Campaigns in tropical countries, where the enervating effects of climate and climatic disease have to be met and where the nature of the country, with every inch of which its inhabitants are familiar, lends itself to ambuscades and irregular and defensive warfare are always difficult undertakings. But eventual success depends, after all, upon the determination and fortitude of the more powerful belligerent, and if the American nation, having once set themselves to the task, have made up their minds not to look back until it is done, then we cannot doubt that it will eventually be accomplished.

DEATHS IN THE SERVICES.

Brigade-Surgeon Decimus Filius de Hodgson, M.D. Edin. (retired list), Army Medical Staff, at Carlisle on April 9th, aged 67 years. He obtained his professional training at King's College, London, and Edinburgh University, becoming M.R.C.S. Eng., in 1853, and M.D. Edin. in 1855. In 1857 he joined the Army Medical Department as Assistant-Surgeon, and in 1861 he served with the Royal Artillery engaged in the Sikkim expedition. After his promotion to Surgeon in 1872 and to Surgeon-Major in 1870 he served in the Zulu War of 1879, obtaining the medal with clasp. In 1882 he retired with the honorary rank of Brigade-Surgeon. This officer did some good work in his younger days in medical science and contributed several papers to THE LANCET and other medical journals.

LEAN'S ROYAL NAVY LIST.

The eighty-sixth quarterly issue of this work has now been published with corrections up to the end of March. So much has been said about this practically indispensable work of reference that we need only chronicle the appearance of the April issue. A work on some plan for the sister service would be a boon to all whose duties necessitate constant reference to such books. Messrs. Witherby and Co., High Holborn, and Newman's-court, Cornhill, are the publishers.

MAJOR A. M. DAVIES, R.A.M.C.

We are glad to learn that the Government of India have applied for the services of Major Davies, R.A.M.C., to be extended at headquarters for another year. This officer, who has had capital training and holds an excellent reputation in all matters connected with army hygiene, has done much valuable bacteriological work whilst serving in India.

The following is a list of the surgeons on probation nominated by the medical schools for the Royal Army Medical Corps:—H. S. Anderson, Queen's College, Belfast; J. H. R. Bond, St. Mary's Hospital, London; L. N. Lloyd, Charing-cross Hospital; E. L. Munn, Royal Infirmary, Edinburgh; S. V. H. Underhill, St. George's Hospital, London; L. Wood, Mason College, Birmingham; and E. P. Connolly, Catholic University Medical School, Dublin.

Colonel T. J. Gallwey, C.B., R.A.M.C., who was for seven years Principal Medical Officer of the Egyptian Army and served in the late campaign, reports himself at Aldershot on return to the establishment. It is understood that he is to take over medical charge at Salisbury.

Correspondence.

"Audi alteram partem."

TRAINED NURSES IN IRISH WORKHOUSE HOSPITALS.

To the Editors of THE LANCET.

SIRS,—Justice has not been done to the Local Government Board for Ireland in the paragraphs on the new rules of that Board in reference to nursing in Irish workhouse hospitals and on the objections raised to those rules at a recent meeting of the Tralee Board of Guardians which appeared in THE LANCET of April 8th, 1899 (p. 993).

It will be only fair to give *in extenso* a circular letter sent to the clerk of each union in Ireland by the Secretary to the Local Government Board for Ireland under date Jan. 12th, 1899:—

WORKHOUSE HOSPITAL TRAINED NURSE.

Local Government Board, Dublin, Jan. 12th, 1899.

SIR,—The Local Government Board for Ireland desire to state that they have recently received communications from several boards of guardians inquiring the qualifications a workhouse hospital nurse should possess in order that the guardians may be in a position to apply for recoupment out of the Local Taxation (Ireland) Account of one half of the salary of such nurse.

The Local Government Board have to inform you that it is proposed in due course to prescribe the following qualifications as necessary in the case of any person claiming to be a "trained nurse" for the purposes of Section 58, sub-section 2 (*a*) (ii.) of the Local Government (Ireland) Act, 1898:—

"The term 'trained nurse' shall mean any person who has resided for not less than two years in a clinical or other hospital recognised by the Local Government Board and who after examination has obtained from such hospital a certificate of proficiency in nursing."

The Board have to point out, in connexion with this matter, that they will not be prepared to accept the certificate of the authorities and staff of any hospital except a clinical hospital recognised by the medical examining bodies in Ireland, England, or Scotland, unless the non-clinical hospital has at least 150 beds for medical and surgical cases and unless due provision is also made for giving the probationer nurses a course of training in the nursing of cases of infectious diseases. In addition, the hospital should have a staff of at least one resident and two visiting physicians and a trained head nurse. Such arrangements should likewise be made, including the giving of lectures and the holding of examinations, as shall satisfy the Local Government Board that sufficient opportunities are afforded to the persons undergoing instruction to become fully trained, experienced, and certificated nurses.

I am, Sir, your obedient servant,

THOS. A. MOONEY, Secretary.

To the Clerk of each Union.

It will be observed that the regulation as to qualifications applies only to the *one nurse* in each workhouse upon whose salary recoupment can be claimed from the Government grant provided under Section 58, sub-section 2 (*a*) (ii.) of the Local Government (Ireland) Act, 1898. The payment, status, and privileges of existing nurses are not in any way interfered with by the new regulation. It may be well to quote the Act of Parliament: "The Lord Lieutenant shall cause to be paid in respect of every local financial year, out of the Local Taxation (Ireland) Account, to each county council, on behalf of the guardians of every union, one half of the salary (approved by the Local Government Board) of one trained nurse in each workhouse who is actually employed and possesses the prescribed qualifications."

In reference to the special cases referred to in your correspondent's letter of April 5th[1] we are credibly informed that the reason why the Gorey Board of Guardians received no applications for the post of trained night nurse was because the guardians did not offer sufficient inducements to good nurses to come forward. The object of the Government grant of half the salary of a trained nurse provided for in Section 58 of the Local Government Act of 1898 was to induce boards of guardians to offer really good salaries—say, from £40 to £60 per annum—with the view of securing for each workhouse hospital at least one first-class, highly qualified, and competent nurse.

With regard to the paragraph about Tralee and the nuns the facts are that the medical officer asked for two trained nurses to assist the nuns, and the Local Government Board for Ireland urged the guardians to make the appointments not with a view of superseding the nuns but to assist in the nursing. In 1895 the Roman Catholic Archbishops and Bishops of Ireland requested the Local Government Board for Ireland to insist upon the appointment of "trained nurses" in all hospitals nursed by nuns who should assist at operations, &c., and perform the night nursing.

The foregoing facts in my judgment fully vindicate the action of the Local Government Board for Ireland in regard to the "one trained nurse" within the purview of Section 58 of the Local Government (Ireland) Act.

I am, Sirs, yours faithfully,

Dublin, April 18th, 1899. J. W. MOORE.

"THE RINDERPEST IN SOUTH AFRICA."

To the Editors of THE LANCET.

SIRS,—I notice in THE LANCET of Nov. 5th, 1898, an article by Mr. John Maberley headed "The Rinderpest in South Africa," in which, inadvertently no doubt, a misstatement occurs which may lead to future misapprehension in the minds of men as to the full measure of credit which is due to Dr. Turner in respect of his recent valuable investigations into rinderpest, and more especially in respect of his treatment of the disease by the system of simultaneous inoculation with preventive serum and virulent blood; and as, owing to my official position, I am particularly competent to vouch for the correct facts of the case I trust you will see your way to publish this letter or otherwise to correct the misapprehension. Mr. Maberley states, *inter alia*, that the work of Dr. Koch has been "brought to such a happy and successful conclusion by the labours of Dr. Kolle, who came out to carry on Professor Koch's work, and of Dr. George Turner, the Government Health Officer of Cape Colony. It is very satisfactory to be able to place on record the fact that the name of an English medical man is *associated* with this, perhaps one of the most important achievements in the antitoxic method of treating disease," and throughout his article he has everywhere been careful to place the name of Dr. Kolle in advance of that of Dr. Turner, the implication being that the latter acted merely as an assistant in the work, or almost as a collaborator, to Dr. Kolle.

While in no way wishing to disparage the valuable work of Dr. Kolle I may put forward the following facts. Dr. Turner was placed in charge of the Kimberley rinderpest laboratory and of the Government investigations into rinderpest early in March, 1896, at which time Dr. Koch, in response to the order of the German Government, was called away to proceed to India to investigate bubonic plague, and from that time until June, a period of some four months, Dr. Turner carried on the work unaided. In June, however, Dr. Kolle came out to this colony under an engagement with the Colonial Government to investigate leprosy; but on his arrival he was, at my suggestion, sent by the Government to Kimberley to assist Dr. Turner in his researches. As a matter of fact, although all the results of those researches were given to the world under the joint signatures of Dr. Turner and Dr. Kolle a considerable number of them were prosecuted by Dr. Turner alone, although the converse cannot be said in regard to Dr. Kolle.

The official reports upon which Mr. Maberley has based his article are clearly signed by Dr. Turner as chief, and it is therefore extraordinary that the writer should have gone out of his way to invert the proper order of things. Dr. Kolle is at present absent from the colony, but doubtless no one

[1] See THE LANCET, April 8th, p. 993.

would be more ready than himself to recognise the precedence of Dr. Turner's work and had he been here it would probably have been unnecessary for me to write this letter.

I am, Sirs, yours faithfully,

A. JOHN GREGORY,
Assistant Medical Officer of Health of the Colony.

Colonial Secretary's Office, Local Government and Health Branch, Cape Town, Feb. 24th, 1899.

THE LIVERPOOL LOCK HOSPITAL.

To the Editors of THE LANCET.

SIRS,—As a former resident officer of the Liverpool Lock Hospital I join with you in regretting its closure from lack of pecuniary support. One cannot but express surprise at the inhabitants of Liverpool for two reasons: (1) Liverpool, as we know, is an important merchant port, and many of the patients treated are sailors, therefore one would naturally expect support from large trading firms whose employés derive such benefit; (2) Liverpudlians are justly proud of their medical school. No medical man's training is complete without an adequate knowledge of the varied forms which syphilis may assume. We may read books on syphilis and possess a theoretical knowledge of the disease which will avail us nothing at the bedside without practical work. I gratefully acknowledge that my present knowledge of this disease was derived entirely from visiting the Liverpool Lock Hospital as a student and finally daily watching the progress of cases as a resident. If we take away these opportunities from the Liverpool medical students they will not be fully equipped to deal with the cases which they will have to meet. As Mr. Lowndes has pointed out, people object to the term "lock." Yet we must surely remember that even if these cases be admitted into the wards of a general infirmary the same "stigma" must be present—a "stigma" of ignorance. No one minds helping a case of nervous disorder the result of syphilis. Yet people refuse to support an institution treating cases of syphilis *ab initio*, which treatment would have prevented the development of these nervous disorders. Prevention, we know, is better than cure—*ergo* far better than allowing these patients to drift into an incurable condition. Ignorant patients suffering from syphilis cannot possibly be treated successfully without the most careful supervision. They either neglect treatment altogether, or as soon as they perceive improvement in their condition as a result of treatment they desist from further treatment and the disease progresses to an incurable condition or even ends fatally. To such patients as these our lock hospitals, or wards, are a boon and also a safety-valve for the ignorant and immoral section of our populace. The fact that syphilis does occur and does spread is one which we must face. We must not hold up our hands in righteous horror and say "These things should not be," but must recognise that "they *are*," and, I fear, ever will be. We can only hope that the people of Liverpool will yet see their folly and repent, and ere long we shall see the Liverpool Lock Hospital re-established upon a sound financial basis. The subscribers will have the satisfaction of knowing that they have cared for the unfortunately afflicted ones and have also assisted in the advancement of medical science.

I am, Sirs, yours faithfully,

Bedford General Infirmary, April 17th, 1899. S. J. ROSS.

"CERTAIN ORGANISMS ISOLATED FROM CANCER AND THEIR PATHOGENIC EFFECTS UPON ANIMALS."

To the Editors of THE LANCET.

SIRS,—May I say a few words—final as far as I am concerned—with regard to Mr. Malcolm's letter in THE LANCET of April 15th? Nothing will be gained by fruitless discussions on the use of terms, so I will leave that largest part of Mr. Malcolm's letter alone. Mr. Malcolm is, of course, at liberty to reject my conclusions; the facts of my work are able to take care of themselves. What follows applies to the several paragraphs in Mr. Malcolm's letter.

Paragraph 1.—Mr. Malcolm's joy at having elicited from me, not "corrections," but that which anyone could have deduced from my paper, seems unnecessary. I did not assert anything beyond the facts of my experiments, and Mr. Malcolm has no right to say that I claim anything which I do not claim or to suggest that I believe anything which I have not stated I believe.

Paragraphs 2 and 3.—These are discussions on terms to which I have referred above.

Paragraph 4.—Mr. Malcolm says he would expect an organism isolated from cancer, if it were the cause of the disease, to produce cancer. It cannot be unknown to Mr. Malcolm that organisms isolated from some human diseases, and generally allowed to be the causes of such diseases, do not always reproduce the same effects in animals as occur in man—e.g., typhoid, cholera, and pneumonia. If I wished to make analogies, I might urge that the reaction obtained in animals with the organisms I have isolated is nearer to the original disease than that obtained with either of those above mentioned.

Paragraph 6.—In reply to this, all the experiments enumerated, with the exception of No. 9, were made with cultures obtained from the case of breast-cancer mentioned. And, as stated in my paper, cultures have been made from the organs of the animals after death, and these have been injected into other animals with similar results.

I am, Sirs, yours faithfully,

H. G. PLIMMER.

St. John's Wood-road, N.W., April 17th, 1899.

IMPROPER ADVERTISEMENTS.

To the Editors of THE LANCET.

SIRS,—Allow me briefly to draw the attention of your readers to a common trick of the commercial advertiser of which I have recently been the victim. In the *Daily News*, *Daily Chronicle*, and *Evening News* of Thursday last an advertisement of a substance called "phosferine," of which or of whose proprietors I have never heard, commences with the words "Dr. A. E. Bridger in his book," &c., and then proceeds to quote a paragraph from my book which states merely a general physiological fact and has no bearing, direct or indirect, on any medicament whatever. The careless readers of advertisements—and they are the vast majority—seeing my name at the top credit me with the authorship of the whole column of absurd puff which follows, and this is evidently what the advertiser aims at. I have warned the proprietors of "phosferine" that unless they withdraw my name I shall commence legal proceedings and I have written to the papers in which the advertisement occurs protesting against such journalistic habits.

I am, Sirs, yours faithfully,

Portland-place, W., April 15th, 1899. A. E. BRIDGER.

*** The advertisement in question has been brought to our notice. Dr. Bridger has our sympathy. We do not suppose that the advertisers in question (Messrs. Ashton and Parsons, of 17, Farringdon-road, E.C.) will attempt to pursue their improper tactics after his protest, but if they do he should have no difficulty in obtaining legal redress.—ED. L.

COW'S MILK AND TUBERCULOSIS ON PILLEYS ISLAND.

To the Editors of THE LANCET.

SIRS,—A few words about tuberculosis in this particular island may be of interest. The population is about 1500; the deaths per annum average 22. About one-third of the deaths are of children under three years; tuberculous meningitis causes most deaths of these. There are no milch cows. Goat's milk is very little used by children as during winter the goats give no milk. Goat's milk is *always* boiled here before use. Most mothers give their infants the breast till the end of the first year and often bread soaked in hot water as well. After the first year the child eats with its parents—salt pork, salt beef, bread, tea, cabbage, and salt fish, but bread and tea as a rule; a few use oatmeal. Phthisis is very prevalent. No exact statistics can be given, as no death certificates are required. I see in those lists of deaths which are published that "worm fever" figures largely, the name here generally given to tuberculous meningitis. Very little fresh meat is eaten by the people and there is no beef; there is a little mutton in the spring and autumn.

I am, Sirs, yours faithfully,

R. F. HILEY, L.S.A. Lond., B.A. Cantab.

Pilleys Island, Newfoundland, April 2nd, 1899.

HUNTER v. CLARE.

To the Editors of THE LANCET.

SIRS,—As it has been said in some quarters that the late Mr. Hunter was an American quack in consequence of his possessing an American diploma of M.D. which was assumed to be a "bogus" one, in justice to that gentleman's memory, for whose widow a fund is now being subscribed, might I ask you to publish the following.

Mr. Hunter's diploma was sent to me a short time ago and I thought it had all the appearance of one granted by a State-recognised university. To be quite sure, however, I wrote to the Jefferson College, Philadelphia, and have just received the enclosed answer. That a registered medical practitioner with such a degree should be refused the honorary title of "M.D." in this country seems to me monstrous and I think that my opinion would be shared by any medical graduate of an English university who being resident in Philadelphia after acquiring the State licence to practise was similarly refused there the same honorary distinction. The holder of an M.D. degree of any recognised university, unless that university withdraws the distinction, must continue to be a Doctor of Medicine independently of all political considerations, wherever he resides. This has nothing whatever to do with the right to practise medicine. That is quite another matter.

I am, Sirs, yours faithfully,
MAJOR GREENWOOD, M.D. Brux., LL.B. Lond.,
Barrister-at-Law.

Hackney-road, N.E., April 15th, 1899.

[INCLOSURE].

The Jefferson Medical College of Philadelphia, Pa.,
Dean's Office, March 28th, 1899.

Major Greenwood, M.D.,
243, Hackney-road, London, N.E., England.

MY DEAR SIR,—I have your letter of March 13th and in reply I may state that Herbert Kingsley Hunter was a Doctor of Medicine of the Jefferson Medical College of Philadelphia and as such qualified to practise medicine, surgery, and midwifery in the State of Pennsylvania so far as any diploma would qualify him for that work.

I do not know what the custom is of our students abroad with respect to attaching the name of the college to their title. In this country it is customary for a physician who holds the degree M.D. to attach the initials to his name without mentioning the institution from which he obtained his degree.

Yours truly,
J. W. HOLLAND, M.D., Dean.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague in Calcutta and Bombay.

NOTWITHSTANDING that plague has every opportunity to spread in Calcutta the second outbreak develops but slowly. The excess in the general mortality averages at the present time only about 20 a day, although the disease is said to have reappeared in Calcutta in the middle of January. It will be remembered that for the whole of last year only about 200 deaths were recorded from plague and during the present development under 400 have been registered as plague. In January there was no increase at all in the average general mortality which is put down at 69 per diem and only five deaths were recorded from plague. In February also there was no increase in the average general mortality, which is put down at 70 per diem, although about 30 deaths were recorded as due to plague and a few others as suspected. The present month (March) has shown a marked increase. To March 27th the average daily mortality has changed from 78 per diem (the normal rate) to 93 per diem, but 360 deaths have been recorded to plague. The excess in the general mortality of 504 would suggest that about 150 deaths occurred from plague in addition to those recorded (360). The suspected cases approximately account for this deficiency. If these figures be reliable they show that the system of discovery of plague deaths is working satisfactorily. The cases of plague do not seem to be of that virulent type which is found in Bombay. Persons are not found dead in the streets and we do not hear of deaths after only a few hours' illness. It is important to note that very few living cases come under the notice of the plague authorities; the records are nearly all obtained by subsequent investigation on the burning-ground, &c., returns. This shows the temper of the people—the same as elsewhere—and that the organisation is inadequate to the discovery of living cases. The measures adopted are that when a house in which a probable death from plague has occurred is discovered it is disinfected and the people are kept under surveillance. Very few patients will go to the hospitals and there is no attempt at eviction and segregation of contacts. As far as preventing the spread of plague the measures are of course useless and inoculation is practically a dead-letter. All one can say is that the outbreak is being carefully watched and that the occurrence of deaths from plague is carefully recorded. The streets of Calcutta as well as the native hovels being so filthy it is a pity that the compulsory cleanliness enacted by the Americans in Santiago as described in THE LANCET of March 11th cannot be enforced also in Calcutta. The sanitary condition of Calcutta is a disgrace. The excessive over-building has deprived the native quarters of almost every possible open space and the accumulation of filth, the overcrowding, the disgusting arrangements for the dry removal of excrement, the foul state of the numerous passages, blind alleys, and courts, and the general condition of the native dwellings make Calcutta one of the dirtiest and most disgusting cities in India. The existence of private wells and small public ponds, in all of which the water is reeking with foulness but is yet used by the natives for all purposes, is a standing danger to the community. The water of the river Hooghly used for the roads and privies is bad enough, but the above sources of water-supply are simply liquid sewage. A fairly good filtered water is supplied to the town, and therefore it is of the first importance that all other supplies for drinking and culinary purposes should be cut off.

Calcutta being now recognised as an infecting centre Government orders have just been issued for the protection of the Mofussil. Local outbreaks have already occurred at Backergunge, Faridpur, Dacca, Saran, and Darbhanga, and it is said that it has been proved that the infection was carried by fugitives from Calcutta. Nothing in the nature of land quarantine will be imposed and nothing will be done to prevent persons in good health from leaving Calcutta. No restrictions will be imposed on suburban traffic. Medical examination of all passengers by rail or boat will be instituted and suspected cases of plague will be detained. The roads out of Calcutta will, however, still be free. The authorities at the places of destination of passengers will be notified of their arrival from an infected area but no restrictions will be placed on their movements. In short, no one will be detained unless there is distinct evidence that he is infected with plague. All this medical examination will require a large staff which is at present neither large nor efficient. Considering the very poor results of examining stations of this kind which have been instituted in other Presidencies this laborious work is of very doubtful value.

In Bombay city the plague still rages with almost unabated fury. 250 deaths from plague are probably occurring every day, as the weekly deaths from all causes still exceed 2200 each week. Long-continued familiarity seems to have bred contempt for the plague and its ravages and if it were not for the published returns and the constant stream of funerals in all parts of the city we should hear hardly anything about it. The chief plague medical officer reports that the type continues about the same. This means that it is extremely virulent, large numbers dying after a very short illness. If we can judge from the two previous outbreaks the ensuing week should be the last of the high level mortality and the disease will then rapidly decline. The course of this last recrudescence has run so far exactly parallel with the previous one and a forecast of its progress seems tolerably clear. There are many places where the plague has occurred with considerable severity but about which we hear very little. In the Mofussil of the Bengal Presidency plague has broken out in several districts and in Hyderabad territory about 100 villages are now infected. At Koppal, at Lingsugar, at Marsheal, and in the Maldrug district thousands of deaths are reported. At Karachi the epidemic continues its course of development and, like last year, is rising in spite of the hot, dry weather. At Poona the epidemic is also developing again; the observation camp at Dandipura has been burnt and about 200 people have been sheltered under the trees.

The difficulties of plague administration in India are illustrated by the following incident. At the Howrah Police-court the constables of the town and the reserve police of Howrah laid down their uniforms and belts, refusing to serve any longer unless the civil surgeon released from the segregation camp one of their comrades who was suspected of having contracted plague. The matter was settled by

arranging that the man should be placed in a special police camp.

No cases of plague have been discovered at Mauritius since the beginning of March.

March 30th.

THE BATTLE OF THE CLUBS.[1]

(FROM OUR SPECIAL COMMISSIONER.)

EASTBOURNE.

The History of a Three Years' Struggle.

IN the long series of special articles dealing with the Battle of the Clubs which has appeared in these columns Eastbourne is among the first towns described.[2] This fashionable resort was one of those comparatively rare places which not only possessed a grievance—this is our common lot—but it was actually engaged in working out a practical remedy. The grievance now so well known and so general was that a speculative insurance company engaged canvassers to tout in favour of the medical men in their employ. Of course this company—the National Medical Aid Company, Limited—enrolled people for 1*d.* per week regardless of the fact that they could afford to pay the usual medical fees. It is not, however, necessary to recapitulate all the evils entailed for they are now well known. It is more to the point to recall briefly what was done at that time—namely, in the autumn of the year 1895. The Eastbourne Medical Society, a purely scientific body constituted for social purposes, found the exigencies of the circumstances such as to justify the abandonment, for the time being, of its neutral policy, so as to take the initiative in the formation of a medical union which would deal with economic questions affecting the ethical and material interests of the profession. It was wisely seen that before combating the medical aid companies run on commercial lines it was necessary to offer the public an alternative. Therefore the Eastbourne Provident Medical Association was constituted in the month of August of that year. The rules were that "any duly qualified and registered practitioner resident in Eastbourne (not practising as a homœopath) may become a member of the staff, subject only to his appointment being approved by the committee," but he would have to sign an undertaking: "(*a*) not to conduct clubs of his own at all (other than friendly societies registered under the Act) unless it be at rates higher than those of the Eastbourne Provident Medical Association; (*b*) to have no professional intercourse whatsoever with any medical man who associates himself with any of the companies known as medical aid societies or with similar institutions so long as the methods adopted by the societies include (1) canvassing for members in the interest of individual practitioners; (2) the virtual sweating of their medical officers by the inadequate remuneration offered for the work done."

The latter part of the above text also served as a resolution which was signed by 38 local practitioners. Only one practitioner refused to sign and this refusal was due not to any disapproval of the objects held in view but because he objected to anything that might appear like a trade union. The unanimity thus displayed placed Eastbourne in a very honourable and exceptional position as compared with many other towns. At the very onset nine practitioners inscribed themselves on the medical staff of the Eastbourne Provident Medical Association and no benefit society or commercial medical aid company could possibly offer to its members so large a choice of medical attendants. The three medical men who were in the employ of the National Medical Aid Company gave in their resignation and joined the association founded by the profession. Thus the battle began. The National Medical Aid Company had to import a medical assistant, a Scotchman with an Irish qualification. On reaching Eastbourne he was courteously warned of the position in which he had placed himself; but he replied that it was a question of £ *s. d.* and forthwith attempted to do the work of the three medical men who had resigned. The forces then arrayed against each other were constituted as follows. On the side of the National Medical Aid Company there were these advantages: a lower tariff, unchecked canvassing, and above all no wage limit. But if their members were thus able to secure medical aid at cheaper rates they were also obliged to insure their lives in the Liverpool Victoria Legal Friendly Society and this they often did not care to do. Then the only medical aid which they could obtain was that of the imported medical officer with whom all the other medical men in the town refused to associate or to hold consultations.

Such was the position some four years ago and it is a matter of great practical importance to know how the struggle has been maintained and what improvements in the method and details of organisation have resulted from the experience acquired. First, it should be recorded that the boycott against the medical officer imported by the National Medical Aid Company was faithfully maintained. He was never met by any of the practitioners in the town. In spite of all that his employers could do for him he did not prosper, and he finally had to leave the town in August, 1896, just a year after the organisation of the Eastbourne Provident Medical Association founded by the united members of the medical profession. The National Medical Aid Company then imported another medical man, but the new-comer was not able to support the struggle as long as his predecessor. He left Eastbourne in March, 1897, so that his tenure of office only lasted a little more than six months. A third medical man had to be imported and he has now written to the secretary of the Provident Medical Association saying that he has resigned his position with the National Medical Aid Company and hinting at a hope that the boycott against him will not be continued. This question has still to be discussed and decided. But the fact remains that the three medical men who have placed themselves in opposition to the united voice and opinion of the profession have all been ultimately compelled to give up the struggle as hopeless. This shows that though there is no law, no very practical or positive means of action, at the disposition of the profession so as to enforce discipline nevertheless a great deal can be done where there is unity of purpose. Yet the fight was not an even one, for not only were the conditions offered to subscribers by the National Medical Aid Company easier to fulfil, but, the better to compete against the profession, the National Medical Aid Company still further lowered their tariff and charged a halfpenny per week for children where formerly they charged a penny. In spite of the higher rates of payment and the wage limit many members of the National Medical Aid Company went over to the Provident Medical Association organised by the profession.

At the end of the first year of its existence the Eastbourne Provident Medical Association had 3689 members. Many of these subscribers had belonged to private clubs organised by different local practitioners, and they followed their medical man when he became a member of the association organised by the profession and was debarred, according to the rule quoted above, from holding a club of his own. At the end of the second year the membership had increased to 4153. The present membership, or rather the membership as estimated at the last annual meeting held in October, 1898, amounted to 5338. This increase of 1185 members in the course of a single year was altogether exceptional, and as the total population of Eastbourne only amounts to 44,000 so large an influx of members is not likely to occur again. Indeed, it required an exceptional circumstance to bring this about. It may be remembered that when the members of the Eastbourne Medical Society first determined to organise a medical aid organisation of their own they appealed to the Eastbourne Provident Dispensary to take this matter in hand. This was a charitable institution possessing certain endowments and managed by a lay committee. There were three medical officers attached to this institution. One of these gentlemen sympathised with the new movement and the other two did not actively oppose it; but the lay committee of the dispensary maintained that the endowments prevented their so altering the rules as to meet the ethical basis which the profession were determined to uphold. Consequently the Eastbourne Provident Medical Association was founded as a totally new organisation and free from all connexion with existing institutions. It was run in direct opposition to the National Medical Aid Company, but maintained a neutral attitude towards the charity known as the Eastbourne Provident

[1] A reprint of the previous articles on the above subject has been published in book form entitled "The Battle of the Clubs," and can be obtained from THE LANCET Offices, price 1*s.*

[2] THE LANCET, Oct. 5th, 1895.

Dispensary. Notwithstanding the fact that no members of the Provident Dispensary were canvassed, a considerable number went over to the Provident Medical Association, though this involved the paying of a higher rate of subscription. In February, 1898, the Provident Dispensary published its annual report for the previous year and it contained special expressions of gratitude to the members of its medical staff. Nevertheless a month later a three-months' notice was served on the three medical men who constituted this staff. The receipts had decreased in so notable a manner that the committee were compelled to alter their rates of payment to their medical staff. At the same time the committee approached two other practitioners and asked them to take up the work at a lower rate of payment. One of these practitioners belonged to the medical staff of the Eastbourne Provident Medical Association, and we regret to say that he accepted. This was a heavy blow and though it had no disastrous effect practically, nevertheless it was a great moral disappointment, for up to that time the members of the profession at Eastbourne had been wonderfully united. On the other hand, the three practitioners who had been attached to the Provident Dispensary went over in a body to the Eastbourne Provident Medical Association and brought with them from 700 to 800 members of the Dispensary. This accounts for the abnormal increase of membership last year. Further, it shows that lay committees cannot do just as they please and that patients follow their medical man and will not accept anyone whom a committee may seek to impose upon them. Under these circumstances the position of the Provident Dispensary must be getting desperate.

The Eastbourne Provident Medical Association is supported by all medical men whose opinion is worth having. It is open to all members of the profession. To canvass for this association could not therefore be considered in the same light as the canvassing for any one particular practitioner. Every practitioner may put down his name on the list and the persons canvassed may select the practitioner whom they prefer. Nevertheless, and as a matter of fact it can hardly be said that any canvassing is attempted. Nearly all the applications for membership are addressed directly to the members of the medical staff and not to the collectors. No complaint has ever been made by any medical man in the town that his patients were canvassed to join the Provident Medical Association. It does, however, sometimes happen that a patient who has been earning perhaps 30*s.* a week and has paid the ordinary medical fees finds it more advantageous to join the Provident Medical Association and to pay a weekly subscription, but this he does generally of his own accord and not in response to any canvassing.

Though the subscriptions levied by the Provident Medical Association are higher than those paid to the Provident Dispensary, the members of the latter have now the choice of only two instead of nine medical men. Then the subscribers to the Provident Dispensary can only see their medical attendant on certain days of the week. For this purpose they must go to the dispensary which may be a considerable distance from their homes and they may have to wait for a long time for their medicine. Finally, they must take their subscriptions to the dispensary. This means trouble and loss of time. The subscribers to the Provident Medical Association, on the other hand, can select for their medical attendant a practitioner who lives in their immediate neighbourhood. They go to his house and do not have to wait long for their medicine, nor are they put to any trouble with regard to the payment of their subscriptions as the collector calls for the money. If the Provident Medical Association had had a central dispensary it is probable that they would not have been so successful. Further arrangements have now been made so that all members may have the service of dental surgeons at very moderate rates. The charges are: for fillings, when the pulp is not exposed 3*s.* 6*d.*, when exposed 5*s.*; extractions, 1*s.* per tooth, with nitrous oxide gas 7*s.* 6*d.* In the latter case the medical man administering the gas gets 4*s.* and the dental surgeon gets 3*s.* 6*d.* For ether a charge of 10*s.* 6*d.* is made and the dental surgeon adds to this his own charge according to the work which has to be done. Artificial work is estimated at the rate of 5*s.* per tooth. With regard to other extra payments which are not covered by the ordinary weekly subscription the rule is that a woman expecting to be confined must employ the medical man on whose list she is inscribed and must pay to him at some date previously to her confinement a fee of 15*s.* Should she, however, prefer to employ some other practitioner, then she will forfeit her right to the professional services of her usual medical attendant for a period of six weeks dating from her confinement. The same fee is charged for premature confinements. Vaccination is performed only with calf lymph at the cost price of the lymph. Fractures, dislocations, and major surgical operations are charged for at the following rates: compound fracture of the thigh or leg, amputation of the leg, arm, foot, or hand, and strangulated hernia, £5; fracture of the lower jaw, simple fracture of the thigh, simple dislocation of the hip, and fracture of the patella, £3; fracture of the leg, tarsus, metatarsus, or toe, or amputation of the finger or toe, £2; dislocation or fracture of the arm, forearm, knee, or ankle, or fracture of the carpus, metacarpus, fingers or thumbs, clavicle, scapula, olecranon, or the ribs, £1.

The work of organising and administering a society which has more than 5000 members, each paying a few pence per week, is a very arduous task. It involves much monotonous and dreary work. The treasurer has to add up subscriptions paid at the rate of 1*d.* or 2*d.* at a time and which amount in the course of a year to more than £1000. The secretary's work has also become so onerous that it has been necessary to engage the services of a paid assistant secretary. Further, it is now necessary to employ two paid collectors and the collection of subscriptions has always been a matter of great delicacy and difficulty. Some check has to be established and precautions have to be taken against possible error or dishonesty. For this reason the collectors are paid a nominal fixed salary of 1*s.* per week. This brings them under the category, legally speaking, of servants and criminal action can then be taken against them. If the collectors were only paid a commission on the amounts which they collected they could only be proceeded against in a civil court, therefore they receive 1*s.* a week salary though their real income is derived from the 15 per cent. commission allowed to them on what they take. The mechanism of the association is organised as follows. There is first of all an application form, which states that during the week ending on such a date the following have applied for membership under the medical man whose name is given. Then follow the names, ages, and addresses of the applicants, and the amount of the weekly subscription which it is proposed that they should pay. These details are entered by the assistant secretary in the application book. This book is divided into columns giving, after the name and address, the name of the medical man selected, that of the collector, the date of application, the date of approval, the date of enrolment, and the date of the first payment. After such of the above details as are then provided have been duly entered, the form of application is initialed by the assistant secretary and forwarded to the medical officer selected by the applicant. The medical officer generally knows the applicant; if not he makes inquiries. When satisfied he returns the form of application to the assistant secretary with his signature under the word "approved"; or else he may file the form of application and send a duplicate in its stead. The medical officer's approval having thus been obtained, the collector is allowed to give a card of membership to the applicant for which the latter has to pay the sum of one penny and is particularly requested to keep the card clean. The particulars are then entered by the collector on what is called the enrolment sheet or Form No. 3, and this is sent to the secretary who refers to the application book to see whether the applicant has been approved by the medical officer selected and whether the details given correspond with what was stated in the first instance. If all this is correct, then the name is entered in the enrolment book. At first this book was divided according to the names of the streets; but this was found to be very inconvenient and a new book is now employed which is arranged alphabetically. It contains 10 columns in which are inscribed (1) the name of the member, (2) the address, (3) the date of entry, (4) the age, (5) the rate of payment, (6) the name of the collector, (7) the name of the medical officer, (8) the number of the folio in the application book, (9) the reference to other members of the same family if any, and (10) general remarks. Two or three lines are left vacant under each single person's name so as to make room for any future change of address, but when there are several persons of the same family enrolled together the duplication of details provides sufficient blank spaces for changes of address.

Doubtless this system would work well if every one concerned attended strictly to the details. But the patient who is in arrears may possibly forget to bring his card, and the medical officer does not like to make himself unpleasant and unpopular by refusing to advise the patient unless he first goes home to fetch his card. Should the members of the medical staff be careless in examining the cards of the members, a dishonest collector would be afforded an opportunity of collecting subscriptions from persons whose membership is not duly entered in the books. Such subscriptions could therefore be kept by the collector. The collector might say that he had not been paid when he has been paid, and to prevent this the members should be careful to see that the payments which they make are duly entered on their cards of membership. Some system of inspection to check the collectors is needed; but all the officers of the Provident Medical Association are busy men and what work they do for the association is done gratuitously. It is not suggested that there has been anything in the way of fraud or dishonesty. Indeed, the total expenses incurred over and above the 15 per cent. commission paid to the collectors only amounts to 2½ per cent. of the receipts. Thus all the money paid goes to the medical staff *minus* 17·5 per cent. The working expenses, it will be seen, are very low, but the medical men have to provide the medicine which they prescribe. Nevertheless, they are well satisfied with their receipts, though this is in part due to the fact that Eastbourne is an exceptionally healthy place. One member of the medical staff informed me that last year, when the death-rate was exceptionally low, he found that by dividing his receipts by the number of patients seen he had received nearly 1*s.* per consultation given. Even deducting from this 2*d.* or 3*d.* for medicine the net payment remaining is very high for this class of work. In many other towns it has been shown that the fee per consultation varied on an average from 1½*d.* to 4*d.* If on the strength of this evidence we take it that the net profit is 9*d.* per consultation and that many of these consultations are those of chronic patients who have been seen before and require no further examination it results that for a new case or a complicated case the medical officer can afford to devote the full time necessary just as if he were dealing with a private patient who paid the ordinary fees. Thus if after deducting the cost of medicine we set down the average net receipts at 9*d.* per consultation and out of this allot 2*d.* or 3*d.* for every old or chronic case which can without injury or risk to the patient be disposed of in two or three minutes there would probably remain 2*s.* or 3*s.* for each case which required lengthy and careful examination. In this manner practice of this description seems likely to prove as remunerative as if the patients did not subscribe by weekly payments but paid the minimum fees when ill. This minimum fee is generally set down at 1*s.* 6*d.* for consultations at the surgery and 2*s.* 6*d.* for visits at the patient's home. Even if the payment does not quite amount to this figure the weekly subscriptions constitute a regular and fixed income and a small sum regularly paid is often better worth having than larger sums which are not regularly paid.

The very difficult and complex question of imposing a wage limit has been worked out with success at Eastbourne. The rule is that families with weekly incomes not exceeding 35*s.* pay at the rate of 2*d.* per week each for adults and 1*d.* each for children. When the weekly income does not exceed 25*s.* then the adults only pay 1*d.* and the children each pay 1*d.* In very large families not more than six children are charged for. Single persons whose weekly income does not exceed £1 pay 2*d.* per week. The subscriptions must be paid in advance. Arrears of four weeks debar the member from medical benefits and after eight weeks he is struck off the books. Also members must be in good health when they join. Altogether only three complaints have been made with regard to abuse, and two of these on inquiry could not be substantiated. Even in the third case it was problematical whether the member had exceeded the wage limit and at all events there was no gross abuse. A family was struck off because the earnings of its members had increased beyond the limit fixed, but no abuse was attempted. Nor are there many bad debts with regard to midwifery and other extra fees.

In view of all these facts, the profession at Eastbourne may be warmly felicitated on the results which they have achieved. In the course of three years they have in turn beaten and driven out of the field each of the three medical men imported by the National Medical Aid Company. The profession have organised a Provident Medical Association of their own which has given such satisfaction to the population that its membership has vastly increased, and to join it many of the members left other medical aid organisations where they had to pay smaller subscriptions. This proves that more can be paid and would willingly be paid when, as in this case, better conditions are offered. On the other hand, while a public need has thus been successfully met the members of the medical staff have improved their own position and receive better remuneration for the work which they do. The Eastbourne Provident Medical Association has also well-nigh broken up the Eastbourne Provident Dispensary because it was not managed according to the principles laid down and accepted by the profession. This constitutes a good record, and the Eastbourne Medical Society and its offspring, the Eastbourne Provident Medical Association, have set an excellent example to the profession throughout the country.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Death of Sir William Roberts.

By the death of Sir William Roberts many of our profession in Manchester feel that they have suffered an irretrievable personal loss. From 1855 to 1889 he was resident in Manchester, first as house surgeon and then as physician to the infirmary, in which position he succeeded the late Dr. Bell without any contest. In 1889 he removed to London and since that time great changes have taken place, many of his contemporaries and his colleagues on the infirmary staff being to the younger generation of medical men known only as names fast fading into oblivion. Some, however, are still left to grieve for his death and to feel that one more link with the past has been broken. And among those not of our profession his death will be lamented by numbers who knew him as physician or friend. In both aspects he inspired confidence and in the latter his genial cheerfulness and kindness of manner, not unmingled at times with a quaint and humorous appearance of simplicity, won for him affection and regard. This is not the place for any estimate of his work as an original inquirer, but it may be said without hesitation that it was good, honest work and as thorough as he could make it. He had a shrewd and penetrating mind and also one special characteristic which kept pace with his natural acuteness and tended greatly to inspire confidence in his judgment, and that was manifest in all that he said or did—namely, a strong vein of common sense. He possessed not only the "scientific imagination" but the critical faculty which is sometimes required to check and control, and was thus able in his researches which were always searchings after truth to bring to bear on them a dispassionate judgment. In this he may well serve as a model. But the friends who are left will think of him and mourn for his loss not as a man of science but as a friend.

The Site of the Infirmary.

The value and importance of the maxim, *Festina lente*, is well illustrated sometimes in Manchester and a good example was given at the meeting of the Manchester City Council on April 12th. In reply to a question Alderman Sir John Harwood is reported as saying that "the delay which had occurred in the correspondence upon the infirmary site question was owing to the importance of the question and the undesirability of hurrying matters unduly." According to this reasoning if a question were of supreme importance it would never be proceeded with; but, indeed, there is no danger of "hurrying matters unduly," for the question of the infirmary site has been more or less under consideration for any number of years back, and if its importance becomes estimated more highly than at present it may be suspended for any number of years to come for fear of "hurrying matters unduly."

The Manchester Sewage Problem.

At the meeting of the Mersey and Irwell Joint Committee on April 10th, a letter was read from the town clerk of Manchester asking for "a further adjournment of the summons before Mr. Yates" which now stands for May 4th.

Mr. H. Grimshaw, one of the corporation members of the committee, pleaded for delay as the "real hindrance to progress was the Local Government Board," for until it approved of the principle of their bacteriological scheme it could not be proceeded with and the adjourned inquiry on the part of the Board has still to be held. It really seems, however, that the Local Government Board is waiting for Manchester, for the town clerk in his letter says that "experts will make a communication as soon as they have obtained the necessary data," and "the Board will then be asked to fix a date for the adjourned inquiry." The matter is important, not to say urgent, and therefore Manchester is apparently acting on Sir John Harwood's principle of not hurrying matters unduly. Everyone acknowledges that the Rivers Committee are most anxious to get on quickly though they seem to be strenuously holding back.

Manchester and Salford Sanitary Association Programme.

At the meeting of the committee of the Manchester and Salford Sanitary Association on April 12th, Professor Leech being in the chair, arrangements were authorised for a local health conference in Ancoats. It was decided also to resume publication of the winter lectures and that next season special prominence should be given to the subject of preventing the spread of tuberculosis. This, indeed, is not a new departure, for the association has waged war against tuberculosis for many years. In continuation of the recent action taken to influence local authorities as to this matter it was decided to seek early interviews with the various boards of guardians. The committee resolved, moreover, on being represented on a deputation now being arranged by the Smoke Abatement League, to urge the Government to take control of the smoke nuisance, as is done in the case of nuisances caused by chemical works. A deputation from the association is about to wait on the Gas Committee to urge the manufacture by the corporation of its own gas by-products, not merely as a source of profit for the ratepayers, but primarily to insure the conduct of such manufacture with the least possible detriment to the public health.

April 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University Spring Graduation.

THE spring graduation ceremonial of the University of Edinburgh took place on April 14th in the M'Ewan Hall. At this ceremonial degrees in arts, law, and science are conferred and on this occasion large numbers of the public were attracted to the function owing to the fact that among the honorary graduates were the Marquis of Dufferin and Ava and Field-Marshal Lord Wolseley. The chair was occupied by Principal Sir William Muir, having on his right the Lord Rector (Lord Balfour of Burleigh), and on his left the Marquis of Lothian. After the degree of Doctor of Divinity had been conferred on two gentlemen Professor Sir Ludovic Grant presented the gentlemen on whom the Senatus had resolved to confer the honorary degree of LL.D. These were the Marquis of Dufferin and Ava; Field-Marshal Lord Viscount Wolseley; Dr. William Mitchell Banks, F.R.C.S.Eng., Emeritus Professor of Anatomy, University College, Liverpool; Professor Andrew C. Bradley, M.A., Glasgow; the Very Reverend Archibald H. Charteris, Emeritus Professor of Biblical Criticism, Edinburgh University; Mr. David F. Lowe, M.A., F.R.S.E.; Professor G. W. Prothero, M.A., D.Litt., of the chair of History, Edinburgh University; and Major-General A. G. Wauchope, C.B., C.M.G. In presenting Dr. Mitchell Banks Professor Grant spoke of him as a graduate of her own whom the University was proud to recognise and whose career had reflected lustre on their school of medicine. Dr. Banks had attained an eminent position in the department of surgery as practitioner, teacher, and writer. Especially noteworthy was his work in connexion with the treatment of cancer and the radical cure of hernia and almost more important than this was the work which he had done as a pioneer of medical education in Liverpool. He had largely furnished the motor forces which had called into existence the now flourishing and famous school of medicine in that city. Dr. Mitchell Banks had filled all the highest offices open to men of science in Liverpool and had represented his University on the General Medical Council. After the honorary degrees had been conferred, Professor Annandale presented for the Cameron prize in Therapeutics Dr. Sydney Monckton Copeman. The prize is awarded annually to that member of the profession who is considered to have done the most to advance the treatment of disease. It was conferred on Dr. Copeman in recognition of his discovery of the advantages of mixing vaccine lymph with glycerine for purposes of vaccination. The address to the graduates was delivered by Professor Hardie. In the course of his remarks he referred to what seemed to him defects in the equipment of Scottish universities. In some respects they were very well equipped; in other respects very badly. In the case of Edinburgh University, for instance, the M'Ewan Hall was a splendid example of munificence and public spirit, but in relation to the rest of the University he might liken it to a Pullman car coupled to some third-class carriages or even cattle-trucks. Cattle-trucks, he thought, was not too strong a term to apply with regard to some of the class-rooms in the old buildings. Then in the matter of bursaries and scholarships they were admirably endowed with funds, but they had practically no fellowships or tutorships, no posts which enabled the best of their graduates to carry on their studies further in the University or to take some part in the teaching. It might be that he was prejudiced by long residence at a southern University, but it seemed to him that both Scottish schools and universities were at fault in allowing the training to consist too exclusively in lectures and examinations. In literary subjects, at any rate, real teaching was more or less tutorial teaching. Neither schools nor universities, however, had at present the requisite means to alter this state of affairs, and he thought that public money could be expended in few more profitable ways than in attracting ability and intellect to the teaching of youth by making the position of the teacher such that he could attend to the progress of his pupils with an undivided and unharassed mind. Professor Hardie concluded his interesting address by pleading for a little more of the spirit of sport in the serious business of life, that the same kind of resolution, self-sacrifice, and energy should prevail in both, and that training and good condition, soundness in mind and body, should be looked on as no less essential in the one than in the other. He quoted finally the words of the Harrow song:—

> "God give us bases to guard or beleaguer,
> Games to play out whether earnest or fun,
> Fights for the fearless and goals for the eager,
> Twenty and thirty and forty years on!"

Glasgow University.

Dr. Robert Muir, F.R.C.P. Edin., has been elected to the chair of Pathology in the University of Glasgow, in the place of the late Dr. Joseph Coats. Dr. Muir was educated at Edinburgh, where he graduated as Master of Arts in 1884 and Bachelor of Medicine and Master in Surgery with first-class honours in 1888. In 1890 he obtained the gold medal for his thesis in taking the degree of Doctor of Medicine. He was appointed senior assistant to the Professor of Pathology in 1892 and Lecturer on Pathological Bacteriology in 1894 to the University. In 1898 he was elected to the chair of Pathology in the University of St. Andrews. He is the joint author of "A Manual of Bacteriology," his collaborator being Dr. James Ritchie.

Aberdeen University.

The Aberdeen University Endowment Association has in hand a sum of £405, being £152 assigned by the donors for specified purposes and £253 at the disposal of the association. At the second annual meeting of the association it was resolved that the time has not yet come for applying to university purposes any part of the balance in hand and the full amount has accordingly been carried forward to next year.—At a meeting of the Special Joint Committee of Aberdeen University Court and Town Council appointed to consider the future of the University Buildings Extension Scheme, a sub-committee was appointed to see if Greyfriars Kirk-Session would accept for the new church a site different from that mentioned in the Act of Parliament. It was intimated that the deficit on the scheme is about £17,500 and that the "anonymous donor" had absolutely withdrawn the conditional offer of a gift of £10,000 which he had made.

April 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Death of Mr. William Frazer, F.R.C.S. Irel., &c.

THE death of Mr. William Frazer, which took place on April 16th at his residence, 20, Harcourt-street, removes from the ranks of the medical profession in Dublin a figure which has held a prominent position among them for nearly half a century. After studying at the House of Industry Hospital he became a qualified surgeon in 1847 and soon acquired an extensive private practice in the city. He became a Fellow, Examiner, and Member of Council of the Royal College of Surgeons in Ireland and brought out a successful work on materia medica. Ever since 1866 when he was elected a Member of the Royal Irish Academy he became every year more widely known as a zealous collector and an active Fellow and Member of the Council of the Royal Society of Antiquaries of Ireland. He contributed largely to the Transactions of both societies and held, since the death of Sir John Gilbert, the office of honorary librarian to the Royal Irish Academy.

Royal Visitors in Dublin.

The Duke and Duchess of York attended the ball given on April 13th by Lord and Lady Roberts at the Royal Hospital. They were present also at the Punchestown and Leopardstown races. On Sunday their Royal Highnesses with the Lord Lieutenant and the Countess Cadogan, accompanied by a number of guests from the Viceregal Lodge, attended the service in the Chapel Royal, Dublin Castle. They afterwards drove across town to lunch with Lord and Lady Ashbourne at 12, Merrion-square. The whole route was lined with people who respectfully saluted the Royal party as they drove past.

Medical Appointment.

At a recent meeting of the board of governors of Dr. Steevens's Hospital Mr. William S. Haughton, B.A., M.B., B.Ch., B.A.O. (Dublin Univ.), Senior Moderator and Gold Medallist in Experimental Physics, &c., was appointed an additional surgeon to the hospital.

April 18th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Pasteur Monument and Institute at Lille.

ON April 9th the statue of Pasteur at Lille was unveiled and on the same day the new Pasteur Institute which owes its existence to Dr. Calmette was opened. It was at Lille that Pasteur who had just been nominated Dean of the new Faculty undertook his researches on alcoholic fermentation, on which he founded the doctrines of Pasteurism. This was in 1894. A commemorative tablet has been placed over the door leading into the little laboratory in the Rue des Fleuves where stood the old Faculty and where Pasteur began his practical researches, undertaken with a view to enlist the sympathy of the neighbourhood in the new Faculty. For this reason he took up the study of yeast, the chief industry of the country round being brewing. Possibly had Pasteur not gone to Lille he would never have begun to study fermentation but would have continued those inquiries into the growth and formation of crystals which had already rendered his name so famous. Following a visit made by Pasteur to Lille in 1894, when he was received by the populace as a veritable conqueror, a group of Lille manufacturers decided to raise subscriptions for the building of a Pasteur Institute which should be a nursery for setting forth his doctrines. The communications made by Dr. Roux at the congress held at Buda-Pest shortly afterwards and the enthusiasm with which the first results of treatment by anti-diphtheritic serum were received created so energetic a spirit that every town and village in the department of the Nord offered a subscription and in a few weeks a sum of 252,000 francs was collected. Various generous donors added to this, the town of Lille presented a site measuring 10,000 square metres, while Dr. Calmette devoted the money gained by him through his process for making alcohol—a sum of 300,000 francs—to the object in question. The Institute cost 1,000,000 francs and its endowment is assured by generous voluntary gifts both from private individuals and from municipalities. It is quite complete and is admirably arranged and comprises laboratories for the study of medical bacteriology, for the study of rabies and anti-rabic inoculation, laboratories for the production of various sera and "vaccines," a laboratory of chemical biology, another for the study of fermentation from an industrial point of view, another in which will be studied micro-biology applied to agriculture, and, lastly, one for the study of biological electricity. In the basement and the outbuildings are stables, warm rooms for monkeys and snakes, besides rooms for keeping inoculated animals, cold storage rooms, a small brewing plant for the study of fermentation in this particular industry, a little distillery, sugar refinery, and water purifying machinery. The director is Dr. Calmette who had been appointed by Pasteur and Roux in 1895 as organiser of the Institute. He was then a naval medical officer who had made some very valuable discoveries with regard to the preparation of an antivenin for snake-bite. He offered his discovery to the Government but the Admiralty refused to accept it. Only recently he has been made *Officier* of the Legion of Honour and has also been made Professor of Experimental Pathology at the State Faculty of Lille. The Institute was opened in state by two Ministers—M. Viger, the Minister of Agriculture, and M. Guillain, the Minister for the Colonies. There were also present a number of delegates from various official bodies, men of science, and some members of Pasteur's family. The monument erected to Pasteur by the town of Lille was unveiled at the same time. It is situated in the Quartier des Écoles and represents Pasteur standing in his laboratory intently examining a flask which he holds in his right hand. The statue, which is in bronze, has a simple pedestal of Soignes stone. Around the base are three separate figures: that in the middle is the figure of a woman who stands holding her child towards Pasteur as if calling his attention to it; on the left a brewery workman is sitting and looking at Pasteur; while on the right is a woman lovingly regarding her child whose life has been saved through Pasteur's discoveries.

Alleged Injuries from the Use of the X Rays.

The first civil court of the Tribunal of the Seine recently had before it a case in which a sum of 5000 francs was claimed as damages by a certain Madame M. against a medical man, Dr. R. She alleges that Dr. R. in order to discover the position of a *nephrite errurale* from which she suffered gave her three sittings under the x rays. The first lasted for 40 minutes; the second, eight days afterwards, for 45 minutes; and the third, fifteen days afterwards, for one and a half hours. The result was that she sustained a severe burn of the abdomen and the thigh. This burn she argued was entirely the fault of the medical man. The tribunal felt itself unable to decide the matter out of hand and has accordingly nominated Dr. Brouardel to give expert evidence. He is to see Madame M. and inform the court whether the injuries complained of are solely due to the x rays, if so whether they were applied too often, whether the tube was too close to the patient, or whether the exposures lasted too long. If such is the case he is to decide whether it is possible in the present state of knowledge to say that the accident was due to negligent errors on the part of Dr. R.

The Report of the Veterinary Department.

The veterinary authorities of the department of the Seine have just issued their annual statistical report for 1897 on contagious diseases amongst animals. The most interesting items are those dealing with rabies and tuberculosis. The latter was found among cows in 17 arrondissements of Paris and in 50 communes of the suburban districts. The number of cowsheds invaded was 247 and the number of animals attacked was 311. These numbers show an increase over those of previous years, but an apparent one only, being mainly due to better diagnosis by means of tuberculin. Unfortunately, there is no law in France at the present time making the use of tuberculin compulsory or any regulation as to the disposal of reacting animals. The use of tuberculin is only compulsory in the case of animals imported into France which are tested at the frontier. With regard to rabies 1295 persons were bitten by mad or reputedly mad animals. 35 children and 121 adults were bitten by dogs or cats undoubtedly mad, while 384 children and 713 adults were bitten by animals afterwards discovered to be healthy. Nine children and 34 adults were bitten by dogs which could not be traced and

17,770 stray dogs were seized in the streets and sent to the pound. Of these 16,097 were killed, being unclaimed, and 1673 were restored to their owners. The report in commenting upon the increase of cases of rabies refers to the number of stray animals and calls for greater stringency in carrying out the regulations at present in force as to muzzling and leading. Dog licences should be more strictly looked after and every dog for which a licence has been taken out should wear a collar bearing a tally as a receipt. A similar regulation obtains in various provincial towns—notably Lyons—and has met with great success. It is unpopular but has proved very efficacious in getting rid of the stray dogs amongst which and by means of which rabies is chiefly spread.

April 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Pharmacy New and Old.

A CONTROVERSY has arisen between members of the medical and pharmaceutical professions in Berlin in a matter which is of interest to English readers also. The prescribing of tabloids, which were until recently little known in Germany, has become very popular with the medical profession and Messrs. Burroughs, Wellcome, and Co. of London have established in Berlin an agency through which tabloids are supplied to pharmacies throughout the country. It is found, however, that the financial interests of the pharmaceutical profession are interfered with by this innovation, for the tabloids being manufactured on a large scale can be sold at a lower price than the pills, powders, mixtures, &c., which the pharmaceutical chemists make up on their own premises and for which they are allowed to charge the somewhat high prices of the official pharmaceutical tariff. Moreover, a chemist has been recently appointed as an assessor (*Hilfsarbeiter*) at the Ministry of Public Instruction to advise the Government in questions concerning the pharmaceutical profession. This gentleman happens to be both President of the Apothecaries' Association and proprietor of one of the largest pharmacies in Berlin. It was probably due to his influence that a few weeks ago a circular was issued by the Minister of Public Instruction informing pharmaceutical chemists that it was against the law to sell medicines consisting of a variety of ingredients if they were manufactured commercially on a large scale, because the law directed that such medicines should be prepared by the chemist himself and that the responsibility should be his. By this decree of the Minister the sale of tabloids was in fact checked to the great dissatisfaction of the medical profession and the public. The pharmaceutical journals, however, were evidently well pleased and pointed out that druggists could not take any responsibility for the productions of foreign factories, and hinted that these tabloids being manufactured on a large scale might probably be of uncertain composition. Tabloids, it was suggested, when necessary at all would better be made by the chemist himself. In order to refute these statements two medical men, Dr. Meissner and Dr. Frank, got an experienced analyst to examine the tabloids prepared by the above English firm, the result being that the weight of the tabloids was found to be nearly uniform and their composition was in accordance with their formula. The same medical men procured powders of morphia and of calomel from six of the leading pharmacies of Berlin, and the analysis of these powders showed that they presented great differences as to their weights and their composition. In order to determine whether the pharmaceutical chemists were correct in their suggestion that tabloids would be prepared in pharmacies with as much precision as in the factory the above-mentioned medical men sent a patient to the pharmacy owned by the President of the Pharmaceutical Association with two written prescriptions of tabloids, the first containing sulphate of iron, carbonate of soda, and arsenious acid, the second containing morphia and nitrate of bismuth. The result was that the tabloids could not be delivered in less than 24 hours and their price was very high. Being freshly made they were still moist, partly broken, and showed great differences in size and composition, so that they were nearly useless. The same result was obtained in another large pharmacy. These facts were published by Dr. Meissner in *Medicin der Gegenwart* and communicated to the Practitioners Association (Aerztlicher Standes-Verein) of West Berlin. The pharmaceutical journals of course tried to meet the charges by saying that the analyses (which had, in fact, been performed by an analyst appointed at the Berlin law-courts) were not exact and that the prescription had not been a correct one. This plea, however, is not likely to persuade anybody of the superiority of medicines prepared in pharmacies by old-fashioned methods as compared with compounds produced in factories provided with every kind of modern appliance.

Immoral Advertisements.

The campaign of THE LANCET against the immoral advertisements of quacks has drawn attention to the existence of similar evils in the German newspapers. Advertisements like that taken from the *Londoner General-Anzeiger* and quoted in THE LANCET of March 25th (p. 855) are rather frequent in many of the Berlin and provincial periodicals, the authors of these offers being for the most part midwives whose licences have been withdrawn in consequence of their having procured abortion or committed other misdemeanours. Another class of advertisements highly immoral in character has become very frequent of late and ought to receive attention from the authorities. These are the advertisements of the "masseuses," for there is but little doubt that the great majority of women who describe themselves as "masseuses" in the ordinary newspapers are neither more nor less than prostitutes. The tenor of these advertisements is often sufficiently clear to exclude any doubt in this matter as will appear from the following extracts taken from various advertisements in one of the leading Berlin periodicals: "Young masseuse," "masseuse Parisienne," "Turkish method," "Chinese method," "massage for gentlemen only," "massage with the aid of a young assistant," &c. A case in point was reported lately by Dr. Heller in the *Deutsche Medicinische Wochenschrift*. A man having gone to a masseuse to have massage performed on his fingers for a traumatic contracture she suggested that massage of the abdomen would reduce his corpulent figure and one result of the treatment was that a chancre made its appearance on his glans. Instances like the above are certainly not unfrequent, but the sufferers are naturally unwilling to make full disclosures to their medical attendants. The Berlin Police Department, which takes measures against quack medicines, irregular practitioners, and abortionists, ought to keep an eye on these women whose malpractices tend to bring discredit on a useful method of medical treatment.

April 18th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The International Press Congress.

MEDICINE, among other world-wide interests, was represented at the International Congress of Journalists which has just concluded its sittings in Rome—represented not only by delegates but by the Minister of Public Instruction who, himself a clinical veteran, assisted its proceedings with a cordiality and effect which will make its sojourn in the Eternal City a pleasant memory long after its special business will have been superseded. This is not the place to enter into the details of its programme, the solidarity it promoted in the relations of contemporary journalism, or the facilities it harbingered for the correct and expeditious diffusion of information and ideas in all its varied and extended departments. Rather let me indicate a feature or two of the gathering which may interest your readers—features peculiar to Rome and utilised with an effect which will be as long remembered as it was amply appreciated. I refer more particularly to the great banquet given by Dr. Baccelli to the Congress in the Palace of the Cæsars on the Mons Palatinus. The area in that vast congeries of noble ruins which was set apart for the occasion was the Stadium, often called the Stadium of Domitian from its association with the last and worst of the Flavii. About 800 guests representing the leading journals of the two hemispheres sat down in this magnificent space at a series of eight tables decorated with the flowers of the Roman spring and with the "amphoræ" and other relics recently excavated in the immediate vicinity; while at the table of honour, where Dr. Baccelli took the chair, the ornaments were statuettes and other "antiques" in bronze reproduced

by distinguished living artists. The "feast" was not after the "manner of the ancients" in the immortal travesty of Smollett (another medical man, by the way), but a sumptuous repast purveyed by a well-known culinary establishment and served with admirable punctuality and order. Add to all this a glorious blue sky, a brilliant sun, and a gentle caressing breeze from the Latin shore and a notion may be formed of the scene and its surroundings as Dr. Baccelli addressed his polyglot hearers in the language which was once that of the State and is still that of the Church of Rome. Thanks to clear, articulate elocution and dramatic gesture the speech was as readily followed in its main outlines as when the same orator spoke in the same language to the members of the International Medical Congress in Berlin in 1890 and in Rome in 1894; and though making no pretension to the fastidious classicism of which the public orators of Cambridge or Oxford or Dublin are masters, it represented a Latinity quite genuine and quite familiar in Roman circles, ecclesiastical and literary—redolent indeed less of Cicero than of Jerome, but reflecting a stage of the language as it is still recognised at the Vatican and employed in the Papal Allocutions and Encyclicals. I give it *literatim et verbatim* and subjoin a translation:—

Clarissimi viri,
Hic ubi septem et viginti ab hinc saeculis Romulus aeternae urbis fundamenta constituit, mihi et officii et muneris esse sentio illo vobiscum idiomate uti quod in augusto colle hoc, quasi flamen circumvolans ex columnis, arcubus, marmoribus infractis aeternum pererrat et perflat, redditque verba Quiritium.
Si quisque vestrum in humanitatis praelio cum tuba altum sonitum effundente queat comparari, Vos omnes in hunc amicum conventum delegati harmonicum concentum omnibus refertum numeris efficeretis, cui theatrum isto nobilius nusquam poterit reperiri.
Faustum ergo felixque sit.
Bonas artes et omnigenas doctrinas vivissimo amore prosequendi commune propositum esse debet ut hae societati universae, coniunctis omnium viribus, benevertant.
Quapropter Vos natione, civitate, lingua disiunctos, unum concordiae et amoris imperium consociet, dum ad primigenium bonorum fontem remeantes novissima virtute roborati eritis discessuri.
Urbs immortalis quae gnara fatorum Vos excipit advenientes, commorantes amplectitur tanquam viros civitate donatos. Cruore enim oblito quem furialis ira Martis olim effudit, inter haec fatalia rudera, sua quisque vetustissima monumenta nactus, celebrat civilitatis initium, qua hodie arctiore vinculo obstricti omnes populi extentum vivent in aevum.
Vobis demum qui per orbem terrarum humanitatis iura tuemini Roma iuris universi parens et altrix e colle Palatino salutem victoriam laeto corde ominatur.

[TRANSLATION.]

Illustrious Sirs,—Here, where 27 centuries ago Romulus laid the foundations of the Eternal City, I feel it to be in unison at once with my duty and with the post I occupy to address you in that tongue which on this august hill, hovering around like the breath of heaven, wanders and wings its way from broken columns, arches, and marble relics and gives back the words of the citizens of ancient Rome. If each of you in the struggle of humanity may through the organ he represents be compared to the trumpet pouring forth its deep-toned voice, all of you, as delegates at this friendly congress, would combine in a concerted harmony, interweaving notes the most varied—a harmony for which no theatre could anywhere be found more famous than this. May it therefore be of happy and auspicious omen. Our common aim in promoting the liberal arts, in furthering teaching and science of every kind, with the keenest ardour ought to be this: to make them by a supreme united effort conduce and redound to the good of the social organism as a whole. For this end, disconnected as you are in nationality, in citizenship, and in language, may the one empire of concord and love unite you in a common brotherhood, while, returning to the primal source of civil blessings, you will go your several ways reinforced by the most recent inspiration. The Eternal City which, cognisant of fate, receives you as coming guests embraces you in your sojourn as already invested with the rights of Roman citizenship. For remembering no more the bloodshed of old time in the fury of war, each of you, among these ruins redolent of so many fates, finds a link with his country's past and celebrates the beginning of that civilisation by which to-day the peoples of the earth, bound by ever closer ties, will live throughout the human term. To you, then, who safeguard the rights of humanity all over the world, Rome the parent and nursing mother of the "jus universum," bids a cordial welcome and Godspeed from the Palatine Hill.

The Senator Bonfadini, President of the Italian Press Association, followed in a witty, highly successful speech in French; but the most effective orator, after Dr. Baccelli, was the Syndic, Ruspoli, who in pure Italian reminded his audience that journalism was born in Rome; that the first journalist was Caius Julius Cæsar who was also (according to Suetonius) the first to admit practitioners of medicine to the rights of citizenship; that that enlightened despot initiated the publication of the debates in the Senate, and in his *Acta Urbis*, the first newspaper ever given to the world, he enabled the provinces to follow the vicissitudes of Roman life, including the games and "spectacula" of the city—the circulation of the *Acta* being effected by special couriers. Journalism fell with the fall of Byzantium to rise again with the Venetian Republic, after which its fortunes in civilised countries belong to modern history. This speech also was enthusiastically received and after its toast, "The Health of the Representatives of the National Press," had been duly honoured the vast company dispersed to wander among the ruins.

Cholera among Poultry.

For weeks past chicken cholera has been present in the Alta Italia. It has acquired such proportions that the municipal health officers are investigating its source and its prevention, if not its cure; inflicting, as it does, on a small scale, the pecuniary loss on dairy farms which the cattle plague wrought on British graziers some 35 years ago. Fatal results from the consumption of cholera-infected poultry are announced. At Bellinzona, in Italian Switzerland, two young men have just died after acute choleraic symptoms due to the ingestion of chickens belonging to a consignment of poultry so infected.

April 16th.

Obituary.

FREDERICK FAWSON LEE, F.R.C.S. ENG., M.B. LOND.

WE have to announce the death of Dr. Frederick Fawson Lee which took place on April 12th at his residence in The Close, Salisbury. The cause of death was pneumonia following influenza. Dr. Lee was born in 1840 and educated at Christ's Hospital and St. George's Hospital, at which latter place he subsequently held the post of house surgeon. In 1865 he graduated as M.B. London and in 1868 became a Fellow of the Royal College of Surgeons of England. He also held the post of house surgeon at the Salisbury Infirmary and on resigning this settled in Salisbury with a view to practise. He soon made a name for himself and acquired a very large practice, so making for himself not only many patients but many friends. He was a physician to the Salisbury Infirmary and surgeon to the St. Nicholas Hospital. He took great interest in the Volunteers and in 1869 was appointed surgeon to the 1st Wilts Rifle Volunteer Corps. In 1877 he was made surgeon and in 1886 surgeon-major, which rank he held until 1891 when he was promoted to the rank of Brigade-Surgeon-Lieutenant-Colonel. In the year 1898 he resigned but was allowed to retain his rank and the right of wearing his uniform. He was a great advocate of ambulance training and conducted classes for the railway men and the police. As a token of the value in which these lectures were held Dr. Lee was presented with a testimonial as a mark of esteem from the members attending his tuition and the officers and men of his regiment also gave him a testimonial. He was buried in the cloisters of the cathedral on April 17th.

JAMES DUNCAN, M.B. LOND., M.R.C.S. ENG.

BY the death of Dr. James Duncan, of Henrietta-street, Covent-garden, the medical profession loses one of its oldest and most esteemed practitioners. His career as a medical student at King's College was such as to gain for him great distinction, for he carried off most of the prizes and was afterwards elected as house surgeon to the hospital. At the termination of this appointment he commenced practice in Henrietta-street and for 53 years he worked with scarcely a holiday. He had a large practice and gained the confidence and friendship of a very wide circle. His unselfish devotion to his patients at all hours of the night as well as of the day can best be realised by those who have been in immediate association with him. It was only during the last six months that his failing health began to wean him from his work and he has now gone to his well-earned rest lamented by a host of friends. Of him it may be truly said—

"Multis ille bonis flebilis occidit."

WILLIAM RENTON, L.R.C.S., L.R.C.P., L.M. EDIN., L.S.A. LOND.

WILLIAM RENTON was born at Knaresborough in 1846 Deciding to enter the medical profession he was articled to Dr. Bell of Bradford who says that "his kindly disposition and honourable conduct endeared him to all who knew

him." He became a student at the Leeds Infirmary and School of Medicine and whilst there was President of the Medical Students' Club. After taking his diplomas in 1871 he settled in his native town. His capability and energy soon secured him a large practice in Knaresborough and the surrounding district. Amongst other appointments he held those of medical officer of health and public vaccinator. He retired from his practice some six years ago, and since then he had been studying and working in many of the London hospitals, perfecting himself in the latest advances in the various departments of medical science. His well-known trim figure and genial but polished manners will be remembered by many who conducted and attended post-graduate classes in London. His friends were expecting and hoping to see him in practice again, giving his patients the advantage of his own excellent experience added to the benefits to be derived from his recent hospital work. Unfortunately cardiac valvular mischief began to trouble him some months back. A marked change was noticed in his appearance, energy, and spirits, but he was very reticent about himself although he was discovered to have had some severe anginal attacks. He was urged to seek advice, but knowing that he had a serious valvular lesion he preferred to remain in ignorance of what might be told him and to live an active life to the end. Still feeling unwell he went to Brighton on March 30th for rest and change. On Good Friday evening (March 31st) he was suddenly seized with dizziness when out but managed to reach the hotel and ascend to his room where he rapidly expired. His remains were interred in the family vault at Knaresborough parish church on April 4th and the esteem in which he was held was evidenced by the large attendance at his funeral. His personal and professional qualities were of the highest order. His cheerful temperament, generous disposition, and unselfish devotion made him beloved by all his patients. He was the friend of the poor and needy, so much so that his house was often spoken of as a "soup kitchen." He has left a deep impression in the hearts of those who knew his honourable character and the profession has lost in him another example of a noble life well spent in alleviating the sufferings of others.

JAMES ROWLANDS, F.R.C.S. ENG., L.S.A., J.P.

MR. JAMES ROWLANDS died at his residence, King-street, Carmarthen, on April 10th, at an advanced age. He was born at Lowtre, Cardiganshire, in 1814, his father being the Rev. Daniel Rowlands, for many years vicar of Llanllwch, Carmarthen. The deceased received his medical education at St. George's Hospital, London, and took the qualifications of M.R.C.S. Eng. and L.S.A. in 1842 and 1843 respectively. In 1857 he was admitted to the Fellowship of the College of Surgeons. Mr. Rowlands shortly afterwards settled in Carmarthen and soon established a very extensive practice. He was surgeon to the Carmarthen Infirmary and for 40 years held the appointment of surgeon to the prison of that town. Mr. Rowlands took a great interest in municipal matters; he was elected mayor of Carmarthen in 1857 and was for 50 years a member of the Town Council. In 1861 he was made a justice of the peace. He was also coroner for the three Commotts district of Carmarthenshire. Mr. Rowlands was very popular and highly esteemed; he has left a widow, four daughters, and one son, for whom much sympathy is felt.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The following scholarships, medals, and prizes have been awarded:—Fifth year students: Mr. James Gaff, the treasurer's gold medal; Mr. R. J. Horton-Smith, the Wainwright prize; and Mr. H. T. D. Acland, the Cheselden medal. Third year students: Mr. C. N. Sears, the first College prize (£20) and the Peacock scholarships (£38 10s.), second tenure; and Mr. A. F. Miskin, the second College prize (£15). Second year students: Mr. C. U. Ind, the Musgrove scholarship (£38 10s.); and Mr. W. H. Harwood Yarred, the first College prize (£20); and Mr. J. E. Adams the second College prize (£10). First year students: Mr. G. C. Adeney, the Tite scholarships (£27 10s.); Mr. C. M. Roberts, the first College prize (£20); and Mr. C. H. Latham, the second College prize (£10).

Medical News.

UNIVERSITY OF DURHAM. — At the First Examination for the Degree of Bachelor of Medicine held at the College of Medicine, Newcastle-upon-Tyne, in April, the following candidates satisfied the examiners:—

OLD REGULATIONS.

Chemistry with Chemical Physics. — Herbert Lovis Noel-Cox, St. Thomas's Hospital.

NEW REGULATIONS.

1. *Elementary Anatomy and Biology, Chemistry, and Physics.*—(First-class Honours) Charles Harold Crass, John Frederic Dover, and Charles William Menelaus Hope, College of Medicine, Newcastle-upon-Tyne; Janet Lane-Claypon and Lucy Selina Molony, London School of Medicine for Women; Thomasina Georgina Prosser, Thomas Rowell, Frederick William Ritson, Briton Smallman Robson, Andrew Smith, and Frank Tomisman Simpson, College of Medicine, Newcastle-upon-Tyne; William Clayton Smales, King's College, London; Otho Boyle Travers and Marmaduke Cordeux Wetherell, Guy's Hospital; and Hugo Wolfenden, College of Medicine, Newcastle-upon-Tyne.
2. *Chemistry and Physics.*—Stanley Cornell Clapham, M.R.C.S., L.R.C.P., Guy's Hospital; Harold Linton Currie and John James Grant, College of Medicine, Newcastle-upon-Tyne; Alfred Herbert Heslop, Oxford University; Lizzie Evelyn Kendal, College of Medicine, Newcastle-upon-Tyne; Wharram Henry Lamplough, Mason College, Birmingham; John Herbert McDowall, College of Medicine, Newcastle-upon-Tyne; Harry Tudor Newling, St. Mary's Hospital; Thomas Eben Pemberton, Mason College, Birmingham; John Malcolm Shaw, College of Medicine, Newcastle-upon-Tyne; Francis Rupert Snell, University College, Nottingham; Basil Edward Spurgin, College of Medicine, Newcastle-upon-Tyne; Sydney Duke Turner, M.R.C.S., L.R.C.P., St. Thomas's Hospital, and Thomas Nicholson Wilthew, College of Medicine, Newcastle-upon-Tyne.
3. *Elementary Anatomy and Biology*—Arthur Budd, College of Medicine, Newcastle-upon-Tyne; Walter Donald Carruthers, Mason College, Birmingham; John Cooper, B.Sc., F.C.S., College of Medicine, Newcastle-upon-Tyne; Wilfred Ralph Leycester Drawbridge, St. Bartholomew's Hospital; Margaret Douglas French, London School of Medicine for Women; Arthur Henry Fullerton, College of Medicine, Newcastle-upon-Tyne; Bryden Glendinning, Guy's Hospital; Charles Robert Lease, College of Medicine, Newcastle-upon-Tyne; George Edward Victor Morris, Mason College, Birmingham; Flora Murray, London School of Medicine for Women; Christie Mûthûswamy-Anthony, Guy's Hospital; John Robert Wylie, College of Medicine, Newcastle-upon-Tyne; Herbert Hoyle Whaite, Mason College, Birmingham; and Auburn Lawrence Wilkinson, College of Medicine, Newcastle-upon-Tyne.
4. *Elementary Anatomy, Chemistry, and Physics.* — Ernest John Manning, St. Mary's Hospital; and Douglas Montague Brooking Snell, St. Thomas's Hospital.
5. *Elementary Anatomy.*—Lætitia Nora Ede, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF EDINBURGH.—The following degrees were conferred at the graduation ceremony held on April 14th:—

Honorary Degree of Doctor of Laws.—William Mitchell Banks, M.D. Edin., F.R.C.S. Eng.

Degree of Doctor of Science (in the Department of Public Health).—John Penny, M.B., C.M., B.Sc. Edin.

Degree of Bachelor of Science (in the Department of Public Health).—Victor George Alexander, M.B., Ch.B. Edin.; David Macquorn-Rankine Crichton, M.B., C.M. Edin.; and Charles Monro Hector, M.D. Edin.

FOREIGN UNIVERSITY INTELLIGENCE.—*Munich:* Dr. Ludwig Lindemann has been recognised as *privat-docent* of Internal Medicine.—*Strasburg:* Dr. H. Eggeling has been recognised as *privat-docent* of Anatomy.—*St. Petersburg (Military Medico-Chirurgical Academy):* Dr. Brusianin has been recognised as *privat-docent* of Hygiene.—*Turin:* Dr. Alberto Muggin has been recognised as *privat-docent* of Pædiatry.

THE LENVAL PRIZE.—This prize, which has been founded by Baron Léon de Lenval of Nice will be awarded at the International Otological Congress to be held in London from August 8th to 11th, 1899. The regulations for its award are as follows—viz.: 1. In connexion with the International Congresses of Otology the sum of 3000 francs. has been given to found a prize bearing the name of "The Lenval Prize." 2. The interest of this sum which has accumulated between one International Otological Congress and the next, shall be awarded to the author of the most marked advances in the practical treatment of affections of hearing during that time or to the inventor of any new apparatus which is readily portable and improves considerably the hearing-power of deaf persons. 3. The sum of 3000 francs will be deposited in a public bank in the name of the president of the jury. 4 The International Otological Congress will elect a jury each time, consisting of seven members. The jury will pronounce its decision at

the closing meeting of each congress. All persons desirous of competing for the prize are requested to communicate with Mr. Cresswell Baber, honorary secretary general, 46, Brunswick-square, Brighton, England, stating the facts on which their claim is based.

MEDICAL MAGISTRATE.—Mr. H. T. Benson, L.R.C.P. Lond., of Market Deeping, has been appointed a magistrate for the Kesteven Division of Lincolnshire.

DEVONPORT ISOLATION HOSPITAL.—The Devonport Town Council at their meeting on April 13th decided to endeavour to purchase seven acres of land adjoining the Infectious Diseases Hospital, which was built in 1882 and is in need of enlargement.

MR. FREDERIC H. MADDEN, for 10 years secretary of the Medical School at St. Mary's Hospital, Paddington, has been appointed secretary to the Asylum for the Education of the Deaf and Dumb Children of the Poor in succession to Mr. W. Resbury Few, resigned.

POISONING BY PRIVET BERRIES.—An inquest was held at Stroud, Gloucestershire, on April 11th upon a female child, aged 20 months, who had died after eating the berries of the common privet. Mr. Embrey, the analyst for the county, examined the contents of the stomach.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and conformed to the by-laws and regulations have been admitted Members of the College—viz.: Messrs. Walter Graham, M.B., Ch.B. Vict., University College and Royal Infirmary, Liverpool; Ernest Edward Nicholl, St. Thomas's Hospital; and Arthur Aubrey Palmer, M.B. Edin., F.R.C.S. Edin., Edinburgh University.

CORNWALL COUNTY COUNCIL.—At the meeting of the Sanitary Committee of the Cornwall County Council held at Truro on April 13th, under the presidency of the Hon. John Boscawen, Mr. Martyn drew attention to the desirability of appointing a medical officer of health for the county. The chairman agreed as to the necessity of such an appointment and upon his motion a sub-committee comprising the chairman, the vice-chairman, and Messrs. Martyn and Newcombe was elected to act.

SOCIETY FOR THE STUDY OF INEBRIETY.—At the annual meeting of this society held on April 13th the President, Dr. Norman Kerr, being in the chair, a reception was given to Dr. Crothers and Dr. Shepard from the United States of America.—The President cited cases in which the different provisions of the new Inebriates Act had been put into operation.—Dr. Crothers called attention to the great advance in the recognition of the disease aspect of intemperance and Dr. Shepard referred to the value of the Turkish bath in the treatment of inebriety.

WEST OF ENGLAND EYE INFIRMARY, EXETER.—The foundation-stone of the new West of England Eye Infirmary was laid by Mr. Franklin on April 11th after a short service by the Bishop of Crediton. This infirmary was founded in 1808 and was the second in the United Kingdom devoted exclusively to diseases of the eye. In 1895 it was decided to entirely rebuild the institution and property adjoining the infirmary was purchased for that purpose. The section now commenced will cost about £8500, towards which £7500 has been raised.

CARDIFF INFIRMARY.—At a meeting of the Cardiff Infirmary held on April 12th under the presidency of Dr. Edwards it was decided that a sub-committee should report upon the proposed reception of paying patients in the institution. A recommendation of the medical board that no member of the honorary staff should hold office longer than 20 years was deferred for future consideration. It was decided that the supply of milk to the infirmary should be only from cows certified to be free from tuberculosis. Legacies to the amount of £2100 have been recently received by the institution and the adverse balance is now reduced to £2900.

MEDICAL MEN AND UNDERTAKERS.—At a meeting of the Council of the British Institute of Undertakers held at the offices, 194, Vauxhall Bridge-road, on Tuesday evening last, the report issued by the London Chamber of Commerce in which that body state that it is a very common practice among medical men to recommend undertakers to the relatives of deceased patients for the purposes of gain or commission was taken into consideration, and a resolution was passed to the effect that the Institute was opposed to any such practices and the secretary was instructed to send a letter of protest to the London Chamber of Commerce.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Midwives Bill.

MR. WEIR has given notice that when the Bill comes on again for second reading he will move "that no measure dealing with the question of midwifery can be considered as satisfactory which does not provide for female medical practitioners to have an equal representation with men on the Central Midwives Board which it is proposed to appoint under the Bill."

Sale of Food and Drugs Bill.

Mr. KEARLEY has a new definition of "food" to propose when the Sale of Food and Drugs Bill reaches the Grand Committee on Trade. It is to this effect—viz.: the term "food" in the said Act (the Food and Drugs Act of 1875) shall include every article used for food or drink by man, other than drugs or water, and any article intended to enter into or be used in the preparation of human food and shall also include all flavouring matters and condiments.

Notification of Infectious Disease.

The Bill to extend the Infectious Disease (Notification) Act of 1889 to places which have not adopted it has been read a second time and awaits the committee stage. In view of this stage Sir SEYMOUR KING has given notice that he will move the addition of the following clause, viz.:—

"The requirement that the medical practitioner attending on or called in to visit the patient shall send to the medical officer of health of the district a certificate stating the name of the patient, the situation of the building, and the infectious disease from which, in the opinion of such medical practitioner, the patient is suffering, shall extend to the age and sex of the patient and such other particulars as the Local Government Board may from time to time require. Where a medical officer of health receives a certificate under this Act relating to a patient within any administrative county in England he shall within 12 hours of such receipt send a copy thereof to the council of such county. Every such council and the medical officer of health of every county borough in England shall send weekly to the Registrar-General such return of the infectious diseases of which they receive certificates in pursuance of this Act as the Local Government Board may from time to time require."

HOUSE OF COMMONS.

THURSDAY, APRIL 13TH.

The Vaccination Question.

Mr. LOGAN asked the Home Secretary if his attention had been directed to the conduct of Captain Abney, a justice of the peace for Leicestershire, at the Ashby-de-la-Zouch Petty Sessions on April 8th, when that gentleman took his seat upon the bench after other justices had granted applications for certificates under the Vaccination Act, 1898, and re-opened the proceedings for the purpose of interrogating the applicants in a manner not warranted by the Act; and if he proposed to take any action in the matter.—Mr. JESSE COLLINGS replied: I am informed that when Captain Abney put the questions referred to he was not aware, having just entered the court, that the certificates had already been granted. If he had known this he would not have put them. There appears to be no reason for the Secretary of State to take any action in the matter.

Zymotic Disease at Aldershot.

Mr. POWELL WILLIAMS, replying to a question on this subject by Major RASCH, said that the report for 1897 showed that the number of cases of zymotic disease was considerable at Aldershot. The General Officer Commanding did not recommend any change in the arrangement under which milk was supplied from the sewage farm but inquiry would be made as to the possibility of a connexion between zymotic disease and the supply of milk from that source.

The Supply of Glycerinated Calf-lymph.

Sir BARRINGTON SIMEON asked the President of the Local Government Board whether he would give an order that glycerinated calf-lymph should be kept in a sufficient quantity at the Local Government Board, and whether he would order that such lymph should be supplied to certified medical men on application so that in future medical officers of health should not have to send to Switzerland for lymph as they occasionally have to do at present.—Mr. CHAPLIN replied: All public vaccinators are at present supplied with glycerinated calf-lymph and a sufficient quantity of the lymph is kept at the Local Government Board for the purpose, but I am not in a position at present to undertake to extend the distribution of that lymph to the additional 16,000 or 17,000 private practitioners in England and Wales.

Lead Poisoning.

Sir CHARLES DILKE asked the Home Secretary whether he was aware that in the case of the death of W. R. Mullock of Hanley from chronic lead poisoning in which a coroner's jury was summoned the coroner had since stated that he stopped the inquest after consultation with the factory inspector; whether such was the case; and whether the allegation of the widow that no fan was in use in the factory where Mullock worked was correct.—Mr. JESSE COLLINGS replied: The factory

inspector himself called the attention of the Secretary of State to the statement mentioned by the hon. Member, adding that he was not consulted on the question either of holding or abandoning the inquest; and the Secretary of State is informed by the coroner that he did not consider it necessary to hold the inquest in view of the fact that the Home Office had already made inquiries into the subject of lead poisoning generally with a view to remedying the present state of affairs as far as possible. The Secretary of State cannot consider that this general inquiry affords sufficient reason for dispensing with the inquiry into the facts of each fatal case for which a coroner's inquest offers an opportunity. He has already expressed in this House and elsewhere his opinion that in lead poisoning cases inquests should be held and he will again intimate this to the coroner in question. As to the facts of the case it appears that the deceased was engaged in September last to work in a place where a fan was in operation, but that after Christmas he was at his own request transferred to another pottery belonging to the same employer where there was at that time no fan. Arrangements were at once made in compliance with the new rules which came into force this year to provide a fan, but unfortunately some delay occurred in procuring and fixing it.

FRIDAY, APRIL 14TH.

Naval Hospital for Wei-Hai-Wei.

In the course of a debate in Committee of Supply Mr. AUSTEN CHAMBERLAIN (Civil Lord of the Admiralty) announced that it is proposed to establish at Wei-Hai-Wei a naval hospital for the treatment of invalids belonging to the China Squadron. He said that Wei-Hai-Wei is by far the healthiest station which we possess in that part of the world.

Medical Service in the Navy.

On the vote for the expense of medical services in the navy, including the cost of medical establishments at home and abroad, Captain PHILLPOTTS complained that medical officers in the navy were compelled to supply themselves with the surgical instruments required by them in the exercise of their profession and suggested that better opportunities should be afforded to these officers for attending hospitals in order to keep in touch with the advances made in medicine and surgery and with their professional brethren.—Mr. AUSTIN CHAMBERLAIN replied that a committee was sitting at the Admiralty inquiring into various questions in connexion with the medical service and it was expected that it would make recommendations on both the subjects mentioned by the hon. Member.

Fever in the Soudan.

Mr. PIRIE asked the Under Secretary of State for Foreign Affairs whether he could now supply the information as to the state of health of the native troops in the Soudan and of the mortality and invaliding which had taken place amongst them since the capture of Khartoum; and whether he would obtain from the Egyptian Government for the information of that House the number of European and Egyptian prisoners released by that victory and their various nationalities.—Mr. BRODRICK replied: Lord Cromer has reported in a despatch dated March 26th that 363 cases of death among the troops from all causes had occurred since the taking of Omdurman, chiefly from malarial fever and dysentery. On March 28th he telegraphed the following details respecting the cerebro-spinal fever: "Among the troops, 126 cases, 54 deaths; among wives and families of native troops, eight cases, eight deaths; among Dervish prisoners at Khartoum, 13 cases, two deaths; among civilians in hospital, eight cases, six deaths. 40 deaths had occurred among civilians in Omdurman. The epidemic was reported to be diminishing." I will inquire whether the information mentioned in the second paragraph of the question can be obtained.

MONDAY, APRIL 17TH.

Venereal Disease in the Army.

Major RASCH asked the Secretary of State for India what was the number of British soldiers invalided home from India on account of venereal disease in 1894, 1895, 1896, 1897, and 1898 respectively and what was the number of men now at Netley and Herbert Hospitals who had been sent there from India on account of venereal disease.—Lord GEORGE HAMILTON replied that the number of British soldiers sent home from India as invalids on account of venereal disease during 1894 was 301; during 1895, 353; during 1896, 479; and during 1897, 662. He had not yet complete returns for 1898. The number now in the Netley and Herbert Hospitals who had been sent there from India was 199.

Scottish Parish Councils and their Medical Officers.

Sir WILLIAM PRIESTLEY asked the Lord Advocate if his attention had been called to the fact that in Scotland a parish council might dismiss its medical officer at a short notice, without the consent of the Local Government Board, on any occasion when his opinion did not coincide with theirs, thus exposing the medical man to insecurity of tenure and possible hardship; and, if he would consider the desirability of assimilating the practice in this respect to that obtaining in England and Ireland, where no medical officer might be dismissed without the consent of the Local Government Board.—The LORD ADVOCATE replied that the answer to the first part of the question was that the parish council might dismiss the medical officer. The answer to the second part of the question was that the Government were not at present prepared to come under any obligation to introduce legislation on the subject.

TUESDAY, APRIL 18TH.

The Appointment of Surgeon-General W. Taylor.

Captain NORTON asked the Under Secretary of State for War whether, in view of the provisions of Section 71 of the Army Act, he would explain the appointment of Surgeon-General W. Taylor as Principal Medical Officer to Her Majesty's Forces, India, this officer being junior in rank to the Director-General of the Indian Medical Service at Headquarters, Simla, and also to the Surgeon-General, Principal Medical Officer of the Madras Command, whose hospitals and districts the Principal Medical Officer of Her Majesty's Forces would inspect as a superior and senior officer; and whether, in order to prevent the weakening of discipline which this might lead to, it was proposed to confer a step of local rank on Surgeon-General Taylor.—Mr. POWELL WILLIAMS replied: Section 71 of the Army Act does not apply to officers on the staff who exercise authority not in virtue of their own rank but of that of the officer on whose staff they are. Surgeon-General Taylor is on the staff of the Commander-in-Chief in India and in that position exercises authority over all medical officers in military employment in India irrespectively of their individual rank.

The Army Veterinary Department.

Captain NORTON asked the Under Secretary of State for War whether he would consider the advisability of placing the Army Veterinary Department on the same footing with the Royal Army Medical Corps as regards military titles.—Mr. POWELL WILLIAMS replied: This question has been fully considered and the Secretary of State is not prepared to make the alteration of titles suggested.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ARNOLD, E. G. R., M.B., B.S. Durh., M.R.C.P. Lond., M.R.C.S., has been appointed Senior Assistant Medical Officer to the Workhouse, the Township of Toxteth-park, Liverpool.

AYRES, G. H., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer to the Tarporley Sanitary District of Tarvin Union.

BERRY, F. C., M.D., B.Ch. Dubl., has been re-appointed Medical Officer of Health by the Burnham Union District Council.

BOGER, WILLIAM HENRY, M.R.C.S., L.R.C.P. Edin., has been re-appointed a District Medical Officer by the Liskeard Board of Guardians.

CARWARDINE, THOMAS, M.B. Lond., F.R.C.S., has been appointed Surgeon-Lieutenant to the 2nd Gloucestershire (Bristol) Volunteer Engineers.

CHEATLE, A. H., F.R.C.S., has been appointed Assistant Aural Surgeon to King's College Hospital.

EYRE, J. W. H., M.D. Durh., D.P.H. Camb., has been appointed Bacteriologist to the Charing-cross Hospital, London, and Lecturer on Bacteriology in the Medical School.

FRASER, J., Colonel, M.D. Irel., has been appointed Principal Medical Officer of the North-Western District.

GRAY, J. P. W., F.R.C.S. Eng., has been re-appointed Honorary Surgeon to the Nottingham and Notts Hospital for Diseases of the Throat, Ear, and Nose.

HAMILTON, THOMAS, M.B., C.M. Glasg., has been appointed Medical Officer by the Dairy Parish Council.

HAMMOND, WILLIAM, M.R.C.S., L.R.C.P. Edin., L.S.A., has been re-appointed Medical Officer to the Fifth District by the Liskeard Board of Guardians.

HARRIS, J. W., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for Frittenden.

HERRICK, R. W., M.D., B.Ch. Dubl., has been re-appointed Honorary Surgeon to the Nottingham and Notts Hospital for Diseases of the Throat, Ear, and Nose.

HUNTER, ANDREW, M.B., C.M. Aberd., has been appointed Medical Officer to the West African Frontier Force.

IREDALE, J., L.R.C.P. Edin., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Mablethorpe Urban District Council.

JOHNSTON, T. L., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Senior Medical Officer for the Bracebridge Asylum, Lincoln, vice L. C. Dillon, resigned.

MERSON, A. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to a combination of Manufacturers in Walsall.

MORGAN, D. N., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Tonyrefail and Gilfach Sanitary District of the Pontypridd Union.

MUIR, ROBERT, M.D. Edin., F.R.C.P. Edin., has been appointed to the Pathology Chair, Glasgow University, vice Professor Coats.

NEWSHOLME, A., M.D. Lond., F.R.C.P., M.R.C.S., has been appointed President of the Incorporated Society of Medical Officers of Health.

NIMMO, JAMES, has been appointed Public Analyst to the Borough of Weymouth and Melcombe Regis.

NORMAN, F., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Eighth Sanitary District of the Parish of St. Mary, Lambeth, London.

NORWELL, J. S., B.Sc. Edin., M.B. Edin., has been appointed Assistant Surgeon to the Perth Royal Infirmary.

PEARCE, G. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer and Public Vaccinator to the Fourth District of the Barnsley Union.

REED, J. ARTHUR, M.B., Ch.B. Vict., has been appointed Assistant House and Visiting Surgeon to the Stockport Infirmary.

SHAPLAND, JOHN, M.A., M.B., B.S. Durh., has been appointed Medical Officer to the Exmouth Dispensary, vice Reginald Martyn, resigned.

SKRIMPSHIRE, J. T., M.D. St. And., M.R.C.S., has been re-appointed Medical Officer to the Blakeney Sanitary District of the Walsingham Union.

SPENCER, E. M., M.D. Toronto, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Penarth Sanitary District of the Cardiff Union.

STEELE, W. H., M.B., C.M. Edin., has been appointed, *pro tem.*, House Surgeon to the Windsor Royal Infirmary, vice W. L. Garner, resigned.

STEWART, DONALD, M.D. Glasg., L.R.C.S. Edin., has been re-appointed Honorary Consulting Surgeon to the Nottingham Throat, Ear, and Nose Hospital.

WEBB, JOHN EUSTACE, M.B., C.M. Aberd., M.S. [illegible], has been re-appointed Medical Officer to the Fourth District by the Liskeard (Cornwall) Board of Guardians.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—House Surgeon for one year. Salary £100 a year, with apartments, board, lodging, and washing.

BRISTOL ROYAL HOSPITAL FOR SICK WOMEN AND CHILDREN.—House Surgeon. Salary £100 per annum, with rooms and attendance (not board).

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £130 per annum, with prospect of increase and rooms in the Infirmary, and coals and gas.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

CARLISLE DISPENSARY.—House Surgeon. Salary £130 per annum and apartments (not board).

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-Inn-road, W.C.—Junior House Surgeon. Salary at the rate of £50 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant. Tenable for three months. Fee £8 8s.

CHELTENHAM GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

CHORLTON UNION.—Senior and Junior Resident Medical Officers for the Workhouse Hospitals, Withington, Manchester, for twelve months. Salary, senior appointment, £130 per annum, and for junior officer £120 per annum, each provided with furnished apartments and attendance (but not rations) in the Workhouse. Applications to the Clerk to the Guardians, Chorlton Union Offices, All Saints, Manchester.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer. Salary commences at £130 per annum, rising £10 a year to £150, with board, lodging, and washing (no liquors).

DEWSBURY AND DISTRICT INFIRMARY.—House Surgeon. Salary commencing at £80 per annum, with board and residence.

FISHERTON ASYLUM.—Assistant Medical Officer. Salary to commence at £100 per annum, with board, lodging, and washing.—Apply to Dr. Finch, The Asylum, Salisbury.

GENERAL INFIRMARY AT LEEDS.—Two House Surgeons for twelve months and two House Physicians for six months. Also a Resident Medical Officer for the Ida Semi-Convalescent Hospital at Cookridge for six months, who will receive an honorarium of £25. Board, lodging, and washing provided for the five officers.

GLASGOW SAMARITAN HOSPITAL FOR WOMEN.—House Surgeon (female).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Resident House Physicians.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

LEICESTER INFIRMARY.—Assistant House Surgeon for twelve months. Salary £80. Board, residence in the Infirmary, and washing provided.

LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL.—Resident Medical Officer. Salary £90 per annum, with furnished apartments, board, coals, gas, and attendance.

LONDON HOSPITAL MEDICAL COLLEGE.—Assistant to the Bacteriologist and Lecturer on Bacteriology. Also Obstetric Tutor.

LONDON HOSPITAL, Whitechapel-road, E.—Obstetric Registrar.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Medical Registrar. Salary 50 guineas per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST, Hardman-street, Deansgate, and Bowdon, Cheshire.—Honorary Assistant Physician.

NORTHAMPTON GENERAL INFIRMARY.—Assistant to the House Surgeon for six months. Honorarium £25, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road.—Resident Medical Officer and Assistant Resident Medical Officer for six months. Salary for the senior post at the rate of £50 per annum.

PADDINGTON INFIRMARY, London.—Resident Clinical Assistant and Second Assistant to the Medical Superintendent for six months. Board, residence, and washing provided, and an honorarium at the rate of £50 per annum, conditionally. Applications to Dr. M. F. Squire, at the Infirmary, 285, Harrow-road, W.

PARISH OF BIRMINGHAM.—Assistant Resident Medical Officer at the Workhouse Infirmary for one year. Salary £100 per annum, with furnished apartments, rations (no alcoholic liquors), coals, gas, laundry, and attendance. Apply to the Clerk to the Guardians, Edmund-street.

ROYAL BERKS HOSPITAL, Reading.—Vacancy in the Medical Staff.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Honorarium of £10 given, with board and rooms in the Hospital.

ROYAL MINERAL WATER HOSPITAL, Bath.—Resident Medical Officer, unmarried. Salary £100 per annum, with board and apartments in the hospital.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, London.—Anæsthetist.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone-road, London, N.W.—Surgeon to the Out Department.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Three Physicians to In-patients, one Physician to Out-patients, one Surgeon to In-patients, one Surgeon to Out-patients, one Ophthalmic Surgeon. The elected candidates will be appointed for twelve months. The Society also requires for the London School of Tropical Medicine, Royal Victoria and Albert Docks, E., a Superintendent and Medical Tutor for twelve months. Salary £250 per annum, and a capitation on the students to be hereafter determined. Board and residence provided.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—Assistant House-Surgeon. Salary £50 per annum, with board, lodging, and washing.

STAMFORD HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington, N.—Junior Resident Medical Officer. Salary, the first three months, at the rate of £50 per annum and afterwards at the rate of £75 per annum, with board and residence in each case.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon. Salary £2 per mensem, with board, washing, and residence.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon for one year. Salary £50 per annum, with board, apartments, washing, and attendance.

THROAT HOSPITAL, Golden-square, London.—Second Resident Medical Officer. Salary £50 per annum, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W., and the VICTORIA CONVALESCENT HOME, Broadstairs.—House Physician for six months. Honorarium at the rate of £50 per annum, with board and lodging in the Hospital.

WREXHAM INFIRMARY.—House Surgeon. Salary £80, with board, washing, and furnished apartments.

Births, Marriages, and Deaths.

BIRTHS.

BOWIE.—On April 13th, at Hertford-street, Mayfair, W., the wife of Alex Bowie, M.D., of a daughter, premature.

CROSS.—On April 17th, at Devonshire House, Bootle, Liverpool, the wife of Harry Cross, surgeon, of a son.

DEMPSTER.—On April 13th, at Winsley, S. Croydon, the wife of W. T. Dempster, M.R.C.S., L.R.C.P. Lond., of a son.

ELLIOTT.—On April 14th, at The Boltons, Farnborough, Hants, the wife of Edgar Elliott, M.R.C.S., of a son.

SANDIFER.—On April 18th, at Porchester-gardens, W., the wife of Henry S. Sandifer, M.D., B.S. Lond., F.R.C.S. Eng., of a daughter.

WIGGLESWORTH.—On April 17th, at Kirkham, Lancashire, the wife of Sidney Wigglesworth, L.R.C.P., M.R.C.S., of a son.

WILLIAMS.—On April 14th, at Clovardy, Harrow Weald, the wife of Penrose Watkin Williams, of a daughter.

WILSON.—On April 15th, at The Moorings, Kew-gardens, the wife of Ralph W. Wilson, M.D., of a daughter.

MARRIAGES.

BARRETT—COWAN.—On April 12th, at Emmanuel Church, Liverpool, by the Rev. W. H. Harpur, uncle of the bride, Alfred Keppel Barrett, M.R.C.S., L.R.C.P., son of Dr. A. E. Barrett, Holland-park-avenue, London, great grandson of the fourth Earl of Albemarle, and grandson of the Hon. and Rev. Thomas Keppel, and grandnephew of Admiral Sir Henry Keppel, to Isabel, only daughter of the late William Cowan, Esq., of Liverpool.

CORNER—MACKWOOD.—On April 12th, at St. Martin's, Trafalgar-square, Frank Corner, M.R.C.S., L.R.C.P., F.G.S., son of F. M. Corner, J.P., Poplar, to Elsie Tatham, only daughter of Thomas Watson Mackwood.

EDWARDS—LUCAS.—On April 11th, at the Church of King Charles the Martyr, Falmouth, Edward Charles Edwards, M.D., of "Shian," Penzance, to Ellen Edgcome, second daughter of the late Frederic Lucas, Paymaster, R.N., of Falmouth.

PEARCE—SUTCLIFFE.—On April 20th, at St. John's Church, Barnsley, by the Rev. J. Ll. Brereton, M.A., George Harper Pearce, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., to Nora, third daughter of the late H. S. Sutcliffe, Esq., of Barnsley.

SUTCLIFF—MACINDOE.—On April 12th, at Dryfemount, Lockerbie, Edward Harvey Sutcliff, M.B., Torrington, North Devon, to Jessie M. Macindoe, daughter of the late James Gray Macindoe, Lockerbie.

YOUNG—SEACOME.—On April 11th, at Hornsey Parish Church, by the Rev. E. J. Purchase, M.A., Chas. Albert Young, B.A. Cantab., M.R.C.S., L.R.C.P., of Hunmanby, Yorks., and Hertford, Herts, to Maria, younger daughter of the late Thos. Harrison Seacome, C.E., and Mrs. Seacome, Wem, Shropshire.

DEATHS.

LANPHIER.—On April 12th, at Alford, Lincolnshire, Charles William Lanphier, M.R.C.S., L.R.C.S., aged 28.

MEDCALF.—On April 15th, at Church-road, Hove, Ernest Sexton Medcalf, M.R.C.S., Medical Officer of Health, Borough of Hove, aged 48.

ROBERTS.—On April 16th, at 8, Manchester-square, W., Sir William Roberts, M.D., F.R.S., in his 70th year.

SAVAGE.—On April 14th, at Winchelsea, Mary, the wife of Dr. G. H. Savage, of pneumonia.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (29th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (24th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. H. B. Robinson: Some Complicated Cases of Appendicitis.—Mr. W. Armstrong: Effects of Nitrogen Gas in the Excretion of Urea and Uric Acid.—Dr. W. Bain: The Relative Excretion of the Nitrogenous Waste Products in a Case of Liver Abscess.

TUESDAY (25th).—CHELSEA CLINICAL SOCIETY (Jenner Institute of Preventive Medicine, Chelsea-gardens, Grosvenor-road, S.W.).—8.30 P.M. Special Meeting for Discussion on Recent Investigations Relating to the Prevention and Treatment of Tuberculosis. Dr. T. Williams: Preventive and Climatic Treatment.—Dr. J. B. Squire: General Preventive Treatment.—Dr. R. Maguire and Dr. S. H. Habershon: General Treatment.—Dr. F. R. Walters: Sanatorium Treatment.

WEDNESDAY (26th).—HUNTERIAN SOCIETY.—8.30 P.M. Paper:—Dr. B. Harris: On the Influence of Ozone on certain Micro-organisms. Dr. T. G. Lyon will show a New Method of Ventilation by a working model.

THURSDAY (27th).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases. 5 P.M. Ordinary Meeting.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—9 P.M. Sir Hermann Weber: The Climates of England Compared with those of the Continent. Followed by a Conversazione.

FRIDAY (28th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Clinical Evening. The following cases will be shown:—Mr. W. Turner: A Case of Achondroplasia.—Mr. S. Boyd: Solution of Continuity of both Femora.—Mr. A. E. Barker: Revolver Shot of the Brain through the Hard Palate, Discovery of the Bullet on the Corpus Callosum by Roentgen Rays, Removal on 69th day through the Vertex, Recovery. (To be illustrated by demonstration of lantern-slides).—Mr. E. W. Roughton: Tumour of the Upper Jaw.—Mr. Pearce Gould: Spontaneous Cure of Recurrent Carcinoma of the Breast.—Dr. A. Morison: (1) A Case of Unilateral Hypertrophy of the Accessory Muscles of Respiration; (2) A Case of False Accentuation of the Second Sound of the Heart.—Mr. M. Biggs: A New Splint for Fractured Clavicle.—Mr. S. Boyd and Dr. Bond: A Case after Excision of the Posterior Half of the Tongue and Epiglottis.—Dr. Batty Shaw: Injury to the Roots of both Brachial Plexuses in an Infant. Dr. N. Dalton: Pulsus Paradoxus.—Dr. B. Thorne: A Case of Aortic Disease with a Musical Bruit to which "Competence" has been restored by Baths and Exercise.—Mr. W. G. Spencer: A Patient after Excision of a Meningo-Myelocele, with a Skiagraph of the Condition before Operation.—Mr. Battle: A Case after Removal of a Tumour of the Frontal Bone (read at meeting in March). Patients will be in attendance at 8 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (25th).—ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. J. C. Ewart: Zebras and Zebra Hybrids.

THURSDAY (27th).—ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. Dewar: The Atmosphere.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

MEDICAL EVIDENCE AT CORONERS' INQUESTS.

THE coroner's inquest is a valuable institution, for if properly conducted it is a real safeguard to the public. But its utility can be greatly limited by circumstances and one of those circumstances, to which we have frequently drawn attention, is the absence of medical evidence. As our readers know, our remedy for this is that the coroner should always be a medical man. To the medical coroner the viewing of a body is not a repulsive piece of pretence. On the contrary, to him the appearance of a corpse may tell much in support or contradiction of the statements shortly to be affirmed on oath before him. To him the evidence of friends, physicians, nurses, and eye-witnesses as to injuries or previous illnesses is full of valuable suggestion which may be lost on a layman; he knows what dose of a given drug is poisonous and what depth of wound in a certain place will account for a fatal issue. Those who think differently from us set against the advantage of having a medical expert in the coroner's seat the alleged drawbacks in the training of the medical man for the legal side of the coroner's duties. The medical man, they say, is not educated in the way that the lawyer is for a position where evidence has not only to be received, but sifted and weighed. But no one goes so far as to say or think that a coroner's inquest in which the cause of death is unknown and at which no medical evidence is forthcoming is satisfactory or in any way fulfils the object for which inquests were instituted and are held.

Such inquests are not satisfactory to the public and are apt to leave a long trail of gossip and innuendo behind them. It is, therefore, a little surprising to us to receive so frequently as we do accounts of inquests at which lay coroners have taken upon themselves the delicate task of instructing the jury to find verdicts without ascertaining what in medical opinion has been the cause of death. The motive of the coroner in these cases is, we are willing to believe, an excellent one—viz., to save the public money, but to save the public money at the expense of the public safety is poor economy. Now, there is a way to be economical with the public money and yet guard the public safety which some of our correspondents would have us believe is pursued by many coroners. That way, which was described recently in a letter to the *Liverpool Post*, may be termed, "cheating the medical man." The writer, signing himself "Medicus," referred to a recent inquest where the coroner had spoken strongly concerning the conduct of a medical man who "had refused to give his opinion on the case under consideration to a policeman who had called to interview him." "As a medical man in practice in the county for many years," the letter continued, "and therefore conversant with some of our worthy county coroners' methods, I should like to ask a question or two. Did the doctor refuse to give his professional advice as an expert to the sergeant because the sergeant and the coroner at his back refused to pay him his fee for that opinion and because—according to the well-known but doubtfully legal practice—the sergeant would simply go to the court and give the doctor's evidence by proxy and thus deprive him of the fee to which he is legally entitled in all such cases? This method of obtaining expert opinion without paying for it has often been adopted in the past. Was it adopted in this case?" We cannot believe that this procedure forms the regular tactics of some coroners and their officers, but would simply point out that the medical man can always defeat these tactics by refusing to give information save at the inquest and as a properly paid witness. The law of the land provides for the payment of such fees and there is nothing whatever grasping in the medical man taking care that he obtains them, and for a coroner to "speak strongly" of the conduct of a medical man in thus asserting his rights is a grave error of judgment. We are, of course, assuming that it was a medical point upon which the policeman sought information, for a medical man might have something to say in the ordinary character of a citizen rather than in that of an expert.

Another old and vexed point in the payment of medical fees at coroners' inquests has recently arisen at Retford, and here, we regret to say, the two gentlemen who differed acutely as to the justice of the case were both medical men, the coroner being of our profession. Dr. J. Housley held an inquest upon a man who died at the Retford Workhouse and ordered the attendance of Mr. N. A. Butterfield who was deputy medical officer of the workhouse. Mr. Butterfield considered that he ought to receive a fee, and the situation between him and the coroner became a strained one, although Mr. Butterfield has written to the press disclaiming any desire to put the coroner to trouble or annoyance. The matter is one upon which some legal decision is required. Where the inquest is on the body of a person who has died in a lunatic asylum, public hospital, infirmary, or other medical institution the medical officer is not entitled to a fee for a post-mortem examination, and it is doubtful if he has any claim for attending as a medical witness. In the case of resident medical officers the practice, we believe, is never to give them fees, and this we consider to be the legal procedure. But when the medical officer to the institution is not resident we certainly think that he should receive fees and that the law should be stretched in his favour. From the report we have received of the case at Retford it would seem that Mr. Butterfield considered his attendance at the inquest quite unnecessary. This is a matter on which the coroner must be allowed to judge. We hope no medical man would wantonly waste the time of another medical man, particularly if he did not intend to, or was unable to, pay him, but medical evidence should always be forthcoming when deaths occur in public institutions where the slightest doubt as to the cause of death arises, for in this way alone can the public mind be relieved.

"THE USE OF MIDWIFERY FORCEPS."

To the Editors of THE LANCET.

SIRS,—Opinion seems to be somewhat divided as to the need of forceps in labour and I fear this will remain a disputed question until the old and (I consider) safer method of teaching becomes a thing of the past. I must say from long experience that the use of forceps might be very largely dispensed with if a little more time were given for Nature to complete her own work and I believe with greater advantage to both mother and child. I was educated at a school whose motto was "Meddlesome midwifery is bad," and I have treasured that motto and religiously acted up to it during the whole of my obstetrical career, and in so doing have learnt to rely almost implicitly on Dame Nature's efforts and resources in this most trying and anxious branch of our calling, and it has been but in few cases that my trust in her powers has been betrayed. In the 1870 cases personally attended I have only found it imperatively necessary to use forceps nine times and my maternal mortality has not exceeded three, and neither of these cases could have been helped by instrumental interference, the first death having resulted from typhoid fever contracted before delivery, the second from perforation of the bowel, and the third from septicæmia following adherent placenta, and it has been my good fortune never to have met with a perineum requiring a stitch. My viable infant mortality from all causes has been 45, or a little over 2 per cent. I am now giving up this arduous work, but if I were commencing again I should with the greatest confidence act on exactly the same lines.

I am, Sirs, yours faithfully,

Harrow-road, W., April 17th, 1899. A. PRINCE.

ARSENIC IN MALARIA.

WE have received from Dr. C. Valvassori-Peroni of the Ambulatorio Policlinico in Milan a reprint of a paper on the treatment of malaria in children by means of subcutaneous injections of arseniate of iron. He has used the method for 23 patients, each of whom received from 30 to 50 injections deep in the gluteal region without ill-effects of any kind. One of these children was 26 months old and had for 14 months taken without any benefit large and repeated doses of quinine; the type of the fever was irregular, the blood contained plasmodia, both intra-globular and extra-globular, and the hæmoglobin was reduced to 40 per cent. This child received 37 injections, after the fifteenth of which the fits ceased and the hæmoglobin rose to the normal amount. Another child two years old had been ineffectually treated with cinchona preparations during the whole of its second year, but was completely cured by 50 injections. The solution employed was made with Zambeletti's citro-ammoniacal arseniate of iron.

MEDICAL (?) CIRCULARS BY POST.

To the Editors of THE LANCET.

SIRS,—I enclose for your notice a post-card and a calendar delivered at my house by post and emanating from an American "Chemical Company." The post-card was headed "Fœtal Chart and Parturition Calendar." The calendar and chart were contained in an envelope merely fastened with a slip tag. It was illustrated with artistic and accurate pictures of the fœtus at various stages—one a section of the pregnant uterus—and a series of enlarged views of the external genitals at the fourth month. This is not the sort of thing to be put straight into the hands of a young woman servant, and this must have occurred in dozens of cases, for the calendar was far too large to get into any letter-box.

I am, Sirs, yours faithfully,

April 17th, 1899. M.B

*** We have seen the calendar and post-card in question and have received other indignant communications concerning them. They emanate from the Antikamnia Chemical Company whose advertising in this particular manner is not calculated to meet with the approval of the profession in this country but, on the contrary, is more likely to ensure the strict neglect of their firm by English medical men.—ED. L.

SURFACE TEMPERATURE OF THE ABDOMEN IN ENTERIC FEVER.

In the *Policlinico* of March 31st Professor R. Massalongo and Dr. S. Silvestri of Verona publish a summary of observations which they have made on the surface temperature of the abdomen in enteric fever. All the observations were made by themselves personally and not with any specially constructed instrument, but with ordinary maximum thermometers having small thin bulbs, and so sensitive that the mercurial column became stationary in about 10 minutes. The thermometer being placed against the abdomen was covered with a thin layer of cotton wool and the whole was held in position with the fingers, so that the conditions as to pressure and radiation were as nearly as possible the same as when a temperature was taken in the axilla. Some experience of the method seems to be required, for their first observations, made several years ago, often gave discordant results; not so, however, with the later ones. Two or more thermometers which have been previously compared with one another may be used simultaneously. They found

the surface temperature of the abdomen in healthy individuals to vary between 36° and 36·4° C. (between 96·8° and 97·5° F.), being constantly from 0·4° to 0·5° C. lower than that of the axilla. In various diseases of the abdomen, such as acute and chronic enteritis, acute and chronic tuberculosis, appendicitis, perityphlitis, acute, subacute, and chronic peritonitis, it was, on the contrary, found that the surface temperature of the abdomen was higher than that of the axilla. In enteric fever this was especially marked, the curve given by the surface temperature of the lower region of the abdomen being in most cases higher than that of the axilla by 0·5° C. or more. The interval between the curves is greater at the beginning and end of the illness than during the intervening period, a feature which is useful firstly in the early diagnosis of a case of enteric fever, and secondly in judging of the danger of relapse after convalescence appears to have set in.

WANTED A HOME FOR AN EPILEPTIC.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers inform me of a recognised home or institution where a female epileptic of 30 years of age could be placed permanently? She could do light housework and could pay a small sum—say, £35—per annum.

I am, Sirs, yours faithfully,
J. ROSS MACMAHON.

Earl's Court-road, Kensington, W., April 13th, 1899.

TWO QUESTIONS.

To the Editors of THE LANCET.

SIRS,—Will you or some of your readers kindly reply to the following questions?—1. Which is the best recent English work on the pathology of the blood; by whom published and its price. 2. In what dose may formic aldehyde (40 per cent.) be used internally and the best vehicle for its administration.

I am, Sirs, yours faithfully,
April 17th, 1899. VOX.

HE WANTED TO SEE THE MICROBES.

ACCORDING to a report in the *Evening News* a member of the Twickenham District Council has "gone one better" than the vestryman who suggested that it would be more economical to have two gondolas on a piece of ornamental water than one as a pair could be used for breeding purposes. At the Twickenham District Council, says our contemporary, the matter of converting a settling tank at the sewage works into a bacteria bed for experimental purposes came before the meeting, and one of the members suggested that a glass screen should be placed at one side of the tank so that the members of the council could watch the process. The chairman pointed out that if the suggestion were carried out it would be impossible to see anything. "But," said the member, "you can see fish swimming in an aquarium!"

"THE FUND FOR THE RELIEF OF THE WIDOW OF THE LATE MR. H. KINGSLEY HUNTER, L.S.A."

To the Editors of THE LANCET.

SIRS,—The undermentioned donations have been received, making a total of £25 4s.

I am, Sirs, yours faithfully,
RIVERS WILLSON, Treasurer.

42, Wellington-square, Oxford, April 18th, 1899.

	£	s.	d.		£	s.	d.
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SURGERY AMONG BIRDS.

THE *New York Medical Journal* and the *American Medical Times* contain some interesting observations relating to the surgical treatment of wounds by birds as having been recently brought before the Physical Society of Geneva by M. Fatio. He mentions the case of a snipe which he has often observed engaged in repairing damages. With its beak and feathers it makes a very creditable dressing, applying plasters to bleeding wounds, and even securing a broken limb by means of a stout ligature. On one occasion he captured a snipe which had on its chest a large dressing composed of down taken from other parts of the body and securely fixed to the wound by the coagulated blood. Twice he had brought home snipe with interwoven feathers strapped on the site of fractures of one of the limbs. The most interesting example was that of a snipe, both of whose legs he had unfortunately broken by a shot. He recovered the bird only on the day following and found that it had contrived dressings and a sort of splint to both limbs. In carrying out this operation some feathers had become entangled around the beak, and not being able to use its claws to get rid of them it was almost dead from hunger. In a case recorded by M. Magnin a snipe which was observed to fly away with a broken limb was subsequently found to have forced the fragments into a parallel position, the upper fragments reaching to the knee, and secured them there by means of a strong band of feathers and moss intermingled. The observers were particularly struck by the application of a ligature of a kind of flat-leaved grass wound round the limb, of a spiral form and fixed by means of a sort of glue.

AN "EMERGENCY FOOD."

To the Editors of THE LANCET.

SIRS,—An interesting announcement appears in the *Globe* of April 18th as to the properties of a food, of which "one pound a day will keep a man for any length of time in absolute health and condition." But the writer (Mr. Yorke-Davies) does not specify of what it is composed. May I venture to ask him to let the profession into the secret?

I am, Sirs, yours faithfully,
April 18th, 1899. M.D

"QUACKS AND QUACKERY."

To the Editors of THE LANCET.

SIRS,—Can you inform me through THE LANCET where I can obtain a copy of a book entitled "Quacks and Quackery," or something like that title? It was published by the Savoy Printing Company of the Strand. I should be glad if any of your readers can inform me where I can purchase a copy if you cannot.

I am, Sirs, yours faithfully,
Pendlebury, Manchester, April 17th, 1899. R. J. HAMPSON.

G. P. (Swansea) does not enclose his name and address. If he will furnish us with this necessary information and send also an exact copy of the door-plate and specimens of the circulars, advertisements, &c., we will advise him. He must understand that the law in the matter is inconclusive.

J. H.—We do not know any such book. The standard physiological treatises contain all the information. Upon special points a medical man might be consulted.

Nestor.—If our correspondent will give us a particular example of the kind of thing to which he alludes we can reply. His question is too vague for answer.

Inquirer.—The secretary of the Association for the Advancement of Medicine by Research is Dr. C. E. Beevor, 33, Harley-street, London, W.

G. V.—We do not know the exact date, but the results of the examination will be published at once in our columns.

Medico has not enclosed his address. We do not know of any such association located in Scotland.

M. B.—The surveyor's view is right.

Author.—No.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, April 20th, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
April 14	28·91	N.W.	0·34	62	49	43	43	44	Raining
,, 15	29·23	N.W.	0·20	89	54	43	44	46	Cloudy
,, 16	29·61	N.W.	0·02	81	51	43	44	47	Cloudy
,, 17	29·93	N.E.	0·08	89	54	37	38	42	Hazy
,, 18	30·03	N.	...	86	54	40	42	45	Overcast
,, 19	30·17	S.W.	...	95	62	39	41	44	Hazy
,, 20	30·09	S.W.	...	101	62	41	44	47	Hazy

During the week marked copies of the following newspapers have been received: *Derby Mercury, Scotsman, Bradford Observer, Dundee Courier, Macclesfield Chronicle, Manchester Courier, Times of India, Pioneer Mail, Citizen, Builder, North British Daily Mail, Accrington Observer, Architect, Glasgow Herald, Brighton Gazette, Liverpool Daily Post, Bristol Mercury, Sanitary Record, Yorkshire Post, Eastern Morning News, Leeds Mercury, Birmingham Daily Post, Sussex Daily News, Newcastle Daily Chronicle, Sheffield Daily Telegraph, Nottingham Guardian, Redworth Guardian, North Devon Herald, Huddersfield Chronicle, Taunton Echo, Flint County Herald, Merthyr Chronicle, Cumberland Pacquet, Coventry Daily Telegraph, Ulverston Advertiser, Kent Herald, Dean Forest Guardian, Lincoln Echo, Bideford Weekly Gazette, Royal Cornwall Gazette, Peterborough Evening News, Newry Reporter, Local Government Chronicle, Public Health Engineer, Reading Mercury, City Press, Hertfordshire Mercury, Ripley and Heanor News, Local Government Journal, Mining Journal, Surrey Advertiser, Bournemouth Visitors' Directory, Long Eaton, Heanor, and Ilkeston Journal, Delhi Morning Post, Science Siftings, Hereford Times, Bakers' Times, Berks and Ozon Advertiser, Horncastle News, Sleaford Gazette, Ouncle Guardian, &c., &c.**

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